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The Moon's Influence on Man and Plants.

The influence of the moon is admitted by all medical men practicing in India. From infancy the natives of tropical climates are taught to believe in lunar influence, and that with good cause, for the intimate connection which exists between the new and full moon, the disturbed state of the atmosphere, and the attacks of epidemic, has been well ascertained. Two hundred years ago a physician named Diemerbroeck, wrote a treatise on the Plague, in which he says: "Two or three days before and after the full moon the disease was more violent; more persons were seized at these times than at others." Many other authorities could be quoted to prove that the moon's influence is not to be regarded as purely imaginary, as is commonly the case. Many curious facts are recorded concerning the moon's influence upon the vegetable kingdom. It is stated that if peas are sown when the moon is increasing, they never cease to bloom; that if fruits and herbs are set during the wane of the moon, they are not so rich in flavor nor so strong and healthy as when planted during the increase. In Brazil, the farmers plant during the decline of the moon all those vegetables whose roots are used as food; and, on the contrary, they plant during the increase of the moon the sugar cane, maize, rice, &c. The English gardeners observe similar rules in regard to grafting, pruning, &c. From observations of Mr. Howard it appears that northerly winds are most frequent during a full moon, and south-west winds blow chiefly at the time of the new moon. It is also remarkable that rain falls most frequently during the last quarter of the moon, and that not a twentieth part of the rain of the whole year falls at full moon.

SEPTIMUS PIESSE.

Chesnuts.

The common chesnut furnishes dextrine, glucose, and farina. It might be as profitably cultivated as any other fruit, but our horticulturists have as yet, exhibited a sublime in difference to its excellence. They have ransacked all the corners of the earth for new foreign fruit trees, but have entirely neglected to cultivate this excellent native nut.

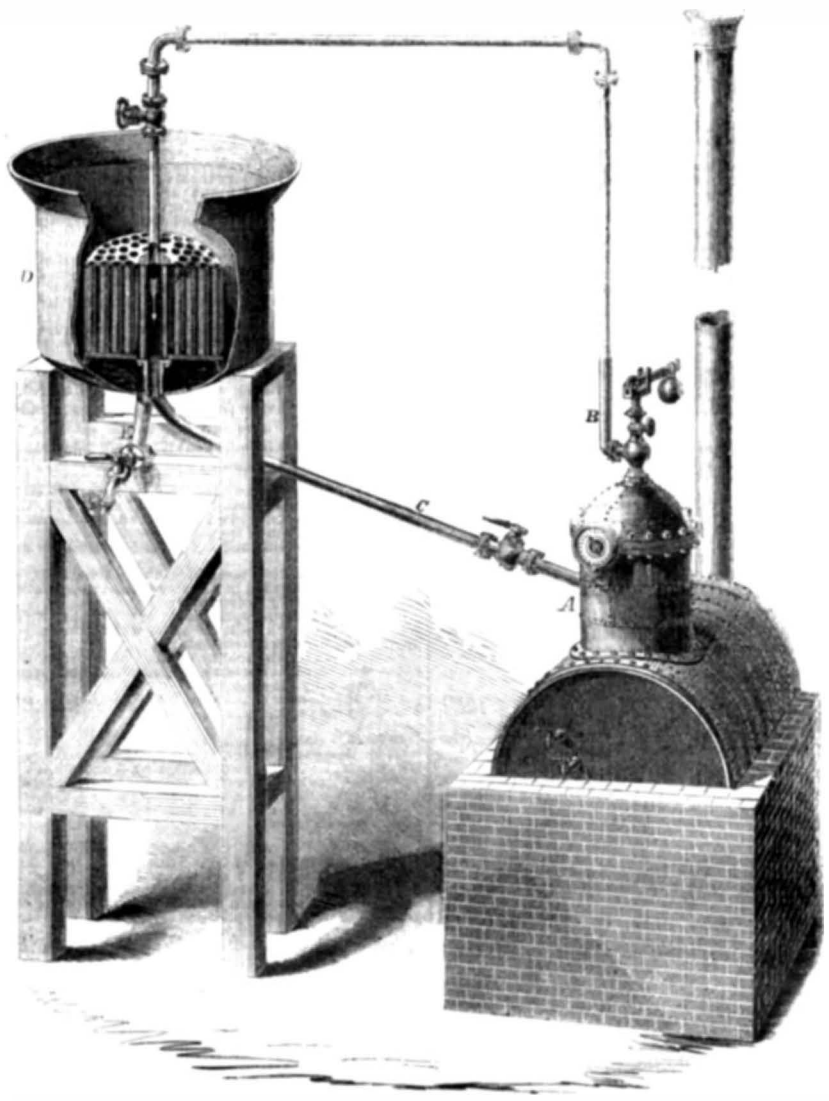
Silk Cultivation.

A few counties in Kentucky, in common with several in Tennessee, Indiana, Ohio, &c., grow the mulberry, and produce raw silk to a certain extent. It has been very satisfactorily demonstrated, especially in Kentucky and Tennessee, that this crop will pay better than three-fourths of all other farm productions; but owing to recollections of the "multicaulis fever," and ignorance of the rural population as to the management of the worms, the lightness of the labor, and the quickness and certainty of the return, silk-raising is not adopted generally among the crops of these several States.

Fuel and Wear of Locomotives.

It has been found by different railroad companies in England, that the wear and tear of engines, generally, is nearly in a direct ratio with the consumption of fuel. The Manchester and Leeds Co. have paid particular attention to this, and they find that the wear and tear follows nearly in a direct ratio.

PATENT EVAPORATOR AND CONDENSER.



Evaporator and Condenser.

The accompanying figure represents an Evaporating Apparatus which may be introduced into vessels of ordinary form where steam is used. It is the invention of Mr. James McCracken, of Bloomfield, N. J., and may be found among our List of Patents for the week ending March 14th, 1855.

The great novelty of this invention consists in the fact that it receives steam both at the top and bottom of the cylinder, and while steam passes along the upper side of the return or condense pipe, the water of condensation runs down the lower side back into the boiler, thus obviating the necessity of a feed pump for the boiler.

A is the steam dome of the boiler; B a pipe for conveying steam to the evaporating pan, D; and C is the pipe which conveys all the condensed steam directly back into the boiler. The evaporating pan is represented on a platform, with a pipe to run off its concentrated contents. The pipes have the usual cocks on them for their proper management.

The operation of the apparatus is as follows:—The pan, D, in which the evaporator is placed, is filled with fluid till it covers the top of the steam cylinder inside, more or less; the liquid thus surrounds the cylinder and occupies the interior of the tubes. The cocks on the steam and condense pipes, B and C, are now opened, and steam enters the cylinder by both; the columns of cold fluid occupying the tubes in the cylinder take up the caloric, and expanding, rise to the surface, giving place to a supply of colder fluid from beneath; this goes on, the stream of water or liquid through the tubes increasing in velocity as the heat increases, till they assume the form of numerous small jets springing out of he tubes, and ebullition and evaporation take place with a rapidity hardly to be conceived, and this with a pressure on the boiler, A, as low as two pounds per square inch. Any amount of pressure, from one to one hundred pounds, may be carried, the apparatus being perfectly under the control of the operator.

The economy of this improvement will be evident to every practical man, as it saves fuel, power, and original cost of feed pump; and where water is scarce, or of such bad quality as to render evaporation by steam, under the old method, impracticable, it removes the difficulty, for the boiler needs no supply beyond what escapes by leakage or defective joints.

The space occupied by the apparatus is small, compared with the vast amount of steam surface obtained; as an illustration, take a cylinder 2 feet 9 inches in diameter by 22 inches deep—the size adapted to pans 7 feet in diameter and 5 feet deep—this will contain 187 tubes 2 inches in diameter and 22 inches long, which, together with the sides and parts of the top and bottom of the cylinder not occupied by tubes, all of which is effective for evaporation, will present a surface of 175 square feet to the fluid to be evaporated, which may be wort, dye liquor, salt, molasses, cane juice, &c., as occasion requires. These evaporators are excellent for breweries, to heat the wort, as they produce perfect circulation and thorough saccharification of the whole.

These Evaporators, on a large scale, may be seen at the works of the inventor, Bloomfield, N. J., where three are constantly in operation, evaporating dye stuffs. A working model, having a glass tube fitted to the return pipe to show the return of the water to the boiler, may be seen any day from 2 to 4 o'clock P. M., at the store of the agents and manufacturers, John W. Reid & Co., No. 11 Old Slip, New York City, who will give any further information required.

Uses of the Sulphuret of Carbon.

An article in the *Comptes Rendus*, by E. Deiss, is both instructive and novel regarding the uses to which this sulphuret may be applied in the industrial arts.

The author commences by stating that in 1840 the price of sulphuret of carbon was as high as from 50 to 60 francs the kilogramme, but that soon afterwards he reduced its price so greatly that in 1848 he sold it at 8 francs the kilogramme, for the purpose of vulcanizing india rubber. At present, with an apparatus composed of 3 retorts he is able to manufacture the immense quantity of 500 kilogrammes of sulphuret in 24 hours, although scarcely a year ago, with the same furnace, the same retorts, and the same amount of fuel, he could only produce 150 kilogrammes in the same time. The product now costs him only 50 centimes the kilogramme, and he has no doubt that, by operating on a larger scale, it might be sold at 40 francs per 100 kilogrammes. As, however, this substance has at present only a very limited employment in the vulcanization of india rubber, the author having a large quantity on his hands, naturally desired to find some other purpose to which it might be applied. He considers that he has discovered one of the greatest importance, namely, the extraction of fatty matters.

He states that Paris daily produces 30,000 kilogrammes of bones, which are collected by the *chiffoniers*, and carried to the manufactories of ivory-black and gelatine. Here they are sorted, some being devoted to the production of ivory-black, others of gelatine, whilst some are sold to the workers in bone. The greater part of them—25,000 kilogrammes daily—are employed in the manufacture of ivory-black; but these undergo a preliminary treatment for the extraction of their fatty matter. The bones are broken and boiled with water for about three hours in large cauldrons; the fat floats on the surface and is skimmed of. The bones are then taken and thrown into a heap, to undergo a kind of fermentation, in which the production of heat induces a state of desiccation which fits the bones for calcination.

In these operations the bone undergoes a great alteration; the long boiling in water dissolves a great portion of the gelatine, which is necessary for the production of a good black; and the fermentation and long exposure to the air causes the almost total destruction of the animal matter, so that a bad black is produced for the sake of only 5 or 6 per cent. of fat.

The author states that much more advantageous results may be obtained by the employment of sulphuret of carbon. He proposes to crush the bones almost to powder, then to treat them with this agent, which almost instantly dissolves all the grease contained in them, and from this it may be separated by distillation, which is greatly facilitated by the low temperature at which this fluid boils, and the ease with which it may be condensed.—The quantity of grease thus obtained is 10 or 12 per cent., and it is superior to that procured by boiling.

He adds, that the same agent may be applied to the extraction of oils from oleaginous seeds, and of the grease from wool. In the latter case, the grease extracted becomes a useful product; it is a butyraceous substance, adapted for the manufacture of some kinds of soap

The suggestions respecting its application to the treatment of bones is a valuable hint to those who manufacture animal charcoal for sugar refining.

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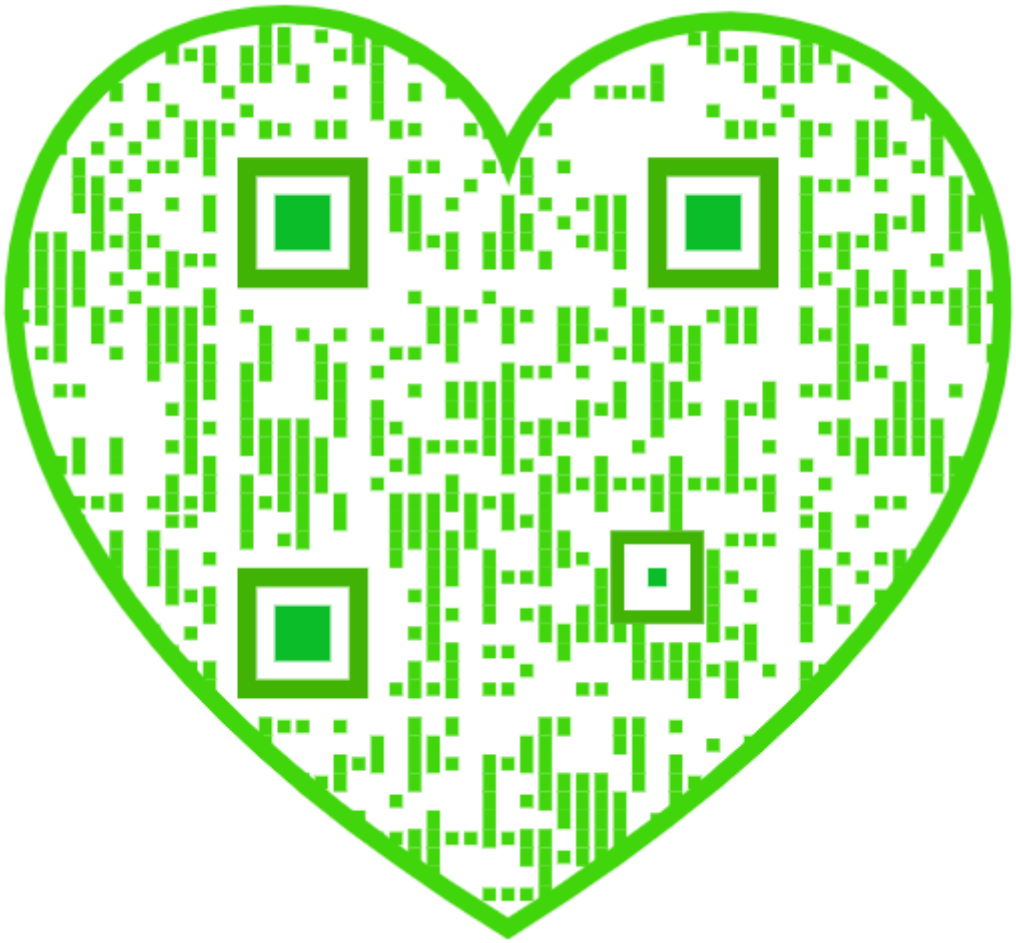

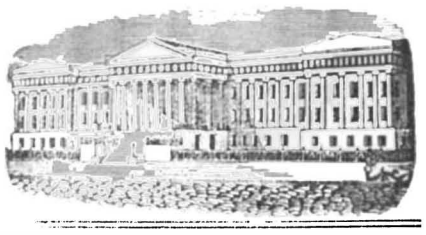

Advice to American Patentees Concerning Foreign Patents.

It is generally much better to apply for foreign patents simultaneously with the application here. If this cannot be conveniently done, as little time as possible should be lost after the patent is issued, as the laws in some foreign countries allow patents to any one who first makes the application, and in this way many inventors are deprived of their right to take patents for their own inventions.

Many valuable inventions are yearly introduced into Europe from the United States,—by parties ever on the alert to pick up whatever they can lay their hands upon which may seem useful.

It is a part of our business to secure European patents —in fact three-fourths, and probably more, of all the patents granted in Europe to American citizens, are solicited through this office. We have faithful agents in the chief cities in Great Britain and on the Continent, and through them we can not only solicit patents, but often effect their sale upon advantageous terms. We can give the names of many of our patrons who have realized fortunes out of their European patents through our Agents abroad, if it is desired

We are prepared at all times to furnish advice in regard to Foreign Patents, and will cheerfully do so on application personally at our office or by letter.

Models are not required in any European country, but the utmost care and experience is necessary in the preparation of the case.

Almost every invention that is of value in this country is of equal value abroad, and we would recommend patentees to pay more attention to securing their inventions in foreign countries than they have heretofore done.

All particulars in regard to the modus operandi of obtaining patents in any country where patent laws exist, may be had by addressing the publishers of this paper.

MUNN & CO.,
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[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING DECEMBER 9, 1856.

FEEDING PAPER TO PRINTING PRESSES.—David Baldwin, of Godwinville, N. J.: I claim the method described, of feeding paper, or other flexible material, to printing presses and other machines, which requires the feed of a single sheet at a time, or separate feed of the sheets from a pile, or number of sheets, by giving to or forming the sheet, or sheets, with a lap or fold, and establishing the feed of said sheets, by means of a drawing or spreading out bar, or its equivalent, acting whether or against the fold, or folds of the sheets, to effect their separation and extension with certainty and despatch, essentially as set forth.

I also claim the employment of lap-folded paper, or other material, in sheets, in such machines, when the folds are made the means, by any suitable mechanical appliances, of effecting the ready separation and feed of the sheets.

I also claim, when combined for operation together, with an automatic feed of the lap-folded sheets, a lap-folding apparatus, operating in the manner described, or any other equivalent way, to fold the sheet, after its delivery from the first feed or passage through the machine for a second passage there-through, by said feed acting against the fold or lap, substantially as shown and described.

SAIL HANKS—H. M. Bonney, of New Bedford, Mass.: I am aware that it is not new to make a metallic hank body in two parts, connected by a hinge and screw. I do not claim such.

I claim an arrangement of the hinge and the guard, relatively to the eye and the clasp, or connecting contrivance—the entire guard being in one piece, and fastened to the movable part of the body, and so as to be movable with it, and to open from and shut against the other part, as specified.

ALLOY COMPOSITION—Timothy Brown, of Georgetown, N. Y.: I claim the metallic composition, or alloy, composed of zinc, from 56 to 70 parts, tin 18 to 8 parts, copper 1 part, and antimony 1 part, for the purpose specified.

VALVE GEAR FOR STEAM ENGINES—A. S. Beebee, of Fall River, Mass.: I claim the secondary toe, I, applied to the main toe, G, and operating substantially as described, in connection with a sliding piece, G, or its equivalent, fitted to the lifter, E, for the purpose set forth.

[This invention is applicable to "Steven's Cut-off," or other valve gear operated by toes or lifters. Its object is to vary the time of closing the induction valve to cut off the steam at an earlier or later part of the stroke of the piston without stopping the engines. This is a good and ingenious improvement.]

YIELDING JOINT FOR PORTABLE FENCES—Robt. J. Brown, of Perry, Pa.: I claim, first, the double dovetail mortise and tenon joint of vertical posts, whether of square or triangular scantling, and the rails, whether horizontal or inclined, at an angle, substantially as described.

Second, enlarging the circular or square picket holes of rails, on the side facing the picket, in the manner described, and for the purposes set forth.

FLOATS FOR STEAM BOILERS—W. S. Blake, of Boston, Mass.: I do not claim the principle of a steam gauge hollow ball float, or sphere, made air tight, and filled with compressed air, or gas forced into it by external pressure, before such float is used, or placed within the boiler.

Nor do I claim a hollow, air-tight box or globe, partly filled with water, or a liquid, and separate from and without reference to the above-mentioned application and connection of it with a boiler, so as to be operated by it, in manner described.

But I claim the specified application of a steam gauge vapor generative float, constructed substantially as explained, with a closed steam boiler, and so as to have its contents vaporized by the heat of those in the boiler, in manner and for the purpose of resisting their pressure, externally on the float, as set forth, the boiler thus serving, by the heat of its contents, to produce the agent, by which the pressure of the steam on the external surface of the float is neutralized.

PRESSING HOLLOW BRICK—M. and J. H. Buck & F. A. Cushman, of Lebanon, N. H.: We do not claim the sliding box, S, nor the general arrangement of the machines; for machines similarly constructed have been previously used.

We claim operating the plunger, Q, by means of the peculiarly constructed cam, F, in combination with the toggle, R, and cross pin, i, when the same are constructed and arranged to operate in relation to each other, in the manner and for the purpose set forth.

[This brick machine presses brick, or plastic blocks, for building purposes, with two plungers; all parts of the bricks are fully compressed, and the surfaces all made smooth; bricks of a very superior quality are manufactured by it.]

ELLIPTOGRAPHS—J. W. Campbell, of Brooklyn, N. Y. I claim attaching the bar, E, to the two beams, D D, of the plates, B B, the pen, G, being secured at the center of said bar, substantially as described, for the purpose set forth.

[Such an instrument is useful. Many instruments for drawing oval figures have been brought before the public; this one has considerable merit to recommend it, It is simple in its parts, durable, and operates correctly.]

GAS BURNER—Job Cornell, of Brooklyn, N. Y., and Barnett McDougall, of New York City: We claim increasing the width of the slit of the burner towards the center, and bringing it to a sharp point, or nearly so, at the extremities in the manner substantially as represented and described.

[This improved gas burner is principally adapted for benzole gas. The object of the invention is to prevent the flickering of the gas flame, by giving the slit a greater width towards the center, as claimed. This simple method of constructing the burner produces a steady flame, more perfect combustion, and a better light.]

CUTTING STALKS OF STANDING CORN—W. B. Coates of Philadelphia, Pa.: I claim the oblique knife, L, in combination with the connecting rod, h, universal joint, g, and crank, h, said rod being made adjustable, for the purpose specified and in the manner set forth, or any equivalent to the same.

VALVES IN SYPHON RAMS—E. W. Ellsworth, of East Windsor Hill, Conn.: I claim the combination of either or both the valves of the ram, with a governing key; said valves and key being constructed and arranged in the manner described, or in any similar manner, whereby any or all of the same objects are accomplished, either in a syphon ram or in a common hydraulic ram.

MASHING GRAIN—E. J. Hainault, of Belgium: I claim the described process of mashing the grain or grains enumerated, either separately or combined, as set forth, for the triple purpose of obtaining alcohol yeast, designed to be dried and pressed, and a mash sediment suitable for feeding cattle; the principal feature of which process consists in heating the said grain or grains in the macerator, by steam applied externally, in the manner described, instead of injecting the steam directly into the mass, as has been heretofore the practice.

POCKET LAMPS—Horace L. Hervey, of Quincy, Ill.: I claim the combination of the revolving match holder with the pawls E, and spring F, catch G, and the extinguisher, L, for the purposes of a portable pocket lamp, as set forth.

PORTABLE PRAIRIE FENCE—Thos. Hoge, of Waynesburgh, Pa: I claim the fence described, or any other which will not collapse in being moved, arranged on a series of wheels, which are capable of being raised and lowered, and when lowered, locked, for the purpose set forth.

[This portable fence can be wheeled from place to place for the purpose of enclosing new spots for pasturing—the best way to feed animals on pasture. When it has arrived at the selected spot, by simply unlocking the wheels the fence descends into position on the ground by its own gravity, and stands firm and perfectly capable of preventing the escape of large or small animals through or over it.]

BOILER WATER GAUGES—F. A. Hoyt, of Boston, Mass. I claim the described arrangement of the outside vessel, C, the dry steam chamber, L, and the float, H, having a direct communication with the indicating hand, and operating in the manner substantially as set forth.

TEETH FOR REAPERS—M. G. Hubbard, of Penn Yan, N. Y.: I claim forming a tooth, substantially as described, by constructing the core thereof, in the manner set forth, and for the purposes specified.

POTATO DIGGERS—Wm. Mussehl, of New York City: I claim the revolving separator, S, in combination with the adjustable, inclined shovel, f, and mold boards, m, arranged and operated in the manner and for the purpose set forth.

PLANING MACHINE—Hudson Osgood, of Waterville, Me.: I do not claim an endless belt and planing cutters, arranged together, so that their planes of rotation, or movement, may be in the same direction, as in my machine, they are arranged so as to cross or stand at right angles to one another.

I claim my arrangement of the endless bed and the belt of planes, substantially as specified, that is, so that when a board is being planed by such, it shall be moved transversely, under the planes, and the planes be drawn longitudinally over and against its surface.

FORGING IRON.—S. S. Putnam, of Boston, Mass.: I claim the arrangement of the four hammers, operating in pairs, in the manner set forth, and actuated by a single central cam, as described.

APPROACH OPENING GATE—Wm. G. Philips, of Newport, Del.: I am aware that gates have been made to turn on their hinges or supports by a falling weight. This I do not claim.

I claim opening and closing a reciprocating gate or gates by means of a falling weight, through the intervention of the cords, cranks, and rods described and represented.

NUT MACHINES—Chas. Ratcliff, of Cincinnati, Ohio: I do not claim any peculiarity in the manner of punching; nor in the operation of the dies, separately considered.

I claim the two sets of dies, counter-dies, and punches, arranged, alternately, upon the peripheries of a pair of rolls, substantially as set forth.

TANNATE OF LIME—Obadiah Rich, of Cambridge, Mass. Patented in England, Dec. 18, 1854: I claim the preparation of the tannate of lime, in the manner set forth, for manufacturing or commercial purposes.

WASHING MACHINES—I. S. Roland, of West Earl, Pa. I do not claim the use of loose balls, nor of a reel, in washing machines.

I claim the arrangement of the article to be washed, around the periphery of a revolving reel in combination with the application of loose balls, or blocks, both inside and outside thereof, substantially in the manner and for the purpose set forth.

LATHES FOR IRREGULAR FORMS—Lemuel Smith, of Plymouth, Conn.; I claim the two expanding jaws, F F, placed on the carriage, E, which works on the bed, A, of the turning lathe, in combination with the pattern, H, the cutter, G, being attached to one of the jaws, and the whole arranged as shown and described, for the purpose specified.

CHURNS—Chas. A. Shaw, of Biddeford, Me.: I do not claim combining with the dasher and pendulous frame, a mechanism by which the pendulous frame, the dasher will have a rotary motion on its axis when the pendulous frame is put in motion.

Nor do I claim, separate from the same, combining with the dasher and the pendulous frame, a mechanism, by which and the pendulous frame, such dasher will have imparted to it, upward and downward motions when the pendulous frame is set in motion.

I claim combining with the pendulous frame, and the mechanism connected therewith, for imparting to the dasher, up and down motions, a mechanism which, at the same time, will rotate the dasher on its axis—the dasher thus having at one and the same time, a compound movement, consisting of one in line of its axis, and one of rotation on its axis, whereby the operation of churning is greatly improved and facilitated.

HARVESTERS—Wm. Tinker, of Kelloggsville, Ohio: I do not claim driving or operating the sickle, F, by means of the bent lever, D, and the scolloped rim, a, and ring, b, on the driving wheel; for this or equivalent devices have been previously used.

But I claim the employment of the freely turning support, d, arranged and operating substantially as described, in combination with the bent lever, D, and scolloped driving wheel, C, for the purpose of securing said lever from strain, and at the same time, of retaining the utmost facility and freedom of motion thereof, in the manner specified.

[This improvement in harvesters insures a superior action to the cutters, as the lever through which the sickle is operated is kept in a proper position for working correctly.]

CORN SHELLERS—H. E. Smith, of Philadelphia, Pa.: I claim the combination of the cylinder, D, and concave, G, when made and operating together, substantially in the manner described.

ROLLING SEEDS IN THE EARTH—Anson Thompson, of Glenns' Falls, N. Y.: I do not claim separately, either a jointed roller frame, or two sets of rollers with the one set in advance of the other, and the rear set following in the spaces untrodden by the forward set.

Neither do I claim a roller made up of a series of wheels, arranged parallel to each other, at a suitable distance apart, and hung so as to rotate separately of each other.

But I claim the combination with the two series of separately revolving wheels or narrow rollers, b b, arranged (the several rollers and each series) relatively to each other, as specified, of the frames, A A, constructed of slats, c, arranged as described, for operation, in connection with the wheels, as set forth.

[This agricultural implement is intended to supersede the use of the harrow and the roller for rolling seed into the soil. It has two frames and fore-and-aft rollers; the hind ones operating on the spaces passed over by the front ones. When the seed is sown on a field, this implement is then driven over it for the purpose of pressing in the seed evenly over the whole field.]

CLEANING THE TOP FLATS OF CARDING ENGINES—Wm. H. Walton, of New York City: I claim suspending the top flats, or lags, upon pivots in the center of their ends, by which they can be raised out of the way of the adjoining flats, or lags, to be turned, by means of a crank working in pinions upon their pivots, or the equivalent thereof, the whole being constructed and arranged substantially as described for the purposes set forth.

And I also claim stripping the flats, or workers, by a rotating brush, so arranged that a card may, in turn, strip the brush and return the strippings to the main cylinder, substantially in the manner and for the purposes described.

CUTTING CURVED MOLDINGS—Jno. J. Westerfield, of New Brunswick, N. J.: I do not claim the elliptical and oval bed, V, connected by the trammel, W, to the rotating bed, U, for this is an old and well known device, for cutting and drawing, or describing ovals.

But I claim the inclined bed, N, either of quadrant, circular, or elliptical form, and the conical head, S, provided with curved cutters, f, arranged and operating conjointly, as shown, for the purpose specified.

[This machine cuts out circular and elliptical moldings for picture and other frames with great facility. Circular moldings are cut equally well on this machine as straight ones are cut in other machines. It is in practical operation and operates well.]

STICKING PINS—Chas. Atwood, dec'd, late of New York City, per his administrators: I claim, first, the twisted inclined conductors, as described, as a means of changing the position of the pin, as specified.

Second, the falling railway, G, as described, for the purpose set forth.

Third, the separating, measuring, and spacing bolts, or instruments, terminating in a double incline plane, in the manner substantially as described.

Fourth, the retarding spring, e, as described, for holding the pins in check upon the rails, while being acted upon by the dividing instruments.

Fifth, the chuck for holding, guiding, and moving the paper, when made to operate as described, or in any manner substantially the same.

Sixth, the elevator or plate, Q, for raising, holding, and delivering the paper, in the manner and for the purpose specified.

Seventh, I claim the connection of the guiding grooves with the follower or driver, in combination with the falling railway, G, and the retarding spring, e, and also of the guiding grooves and railway, in combination with the dividing, separating, or spacing instruments used, as specified, or in combination with the inclined conducting channel, as described.

CIGARS—W. P. Surgey, of Hackdey, Great Britain, assignor to T. H. Stanley, of New York City. Patented in England Sept. 23, 1854: I am aware splints of wood or other matter, with combustible and ignitable composition applied thereto, have been inserted into the ends of cigars, and then, by the application of friction to such combustible composition the cigars have been ignited; but such combustible compositions were formed separately, and were capable of being ignited separately, for the purpose of lighting, and to the best of my belief, such application has been found objectionable, from the trouble occasioned in effecting the insertion of the wood, or other matter, to which the combustible composition was applied, and by the injury to the cigar, by breaking the end of it, in effecting such insertion. I do not claim for the application of such composition to the ends of cigars, cigarettes or cheroots, in the form of separate instruments, to be applied, when formed into igniters, as my invention consists in applying the compositions so as to form the igniter into and as a part of the cigar, cigarette, or cheroot, whereby such ignitable matter, mixture, or composition, becomes a component part of such cigars, cigarettes, or cheroots, to be ignited by the simple application of friction, as when lighting fusees, vistas, lucifer matches, and other instantaneous lights, as expressed.

And I claim cigars, cheroots, and cigarettes, so made, as a new and useful article of manufacture.

HUSKING CORN—John Taggart & L. A. Grover, of Roxbury, Mass., assignors to themselves and E. W. Banker, of Boston, Mass.: We claim the combination of the endless receiving and discharging carrier, constructed as described, the rotary cutter or saw, E, the inclined grated spout, F, and the toothed drum, R, as arranged and made to operate together, substantially in manner and for the purpose as specified.

CEMENT—Willis H. Johnson, of Springfield, Ill.: I claim the combination of bituminous liquid and aqueous cements or mortars, substantially as set forth.

CHURNS—W. A. Vertrees, of Winchester, Mo.: I claim the air tube, with its double acting valve, arranged in the manner and for the purpose set forth.

HUSKING CORN—Robt. Bryson, of Schenectady, N. Y. I claim the combination of the two endless aprons, G I, corrugated rollers, E F F, and guards, J, when constructed, arranged, and operating as shown, for the purpose set forth.

[A corn husking machine is certainly a desideratum—a long-sought-after invention. The unhusked ears of corn are carried along on endless aprons, and then acted upon by a corrugated roller, the speed of which is greater than the aprons; the husks are stripped off by the roller, carried out in one direction, and the clean ears of corn in another. It is a simple, strong, and durable machine, and is stated to operate rapidly and well.]

STAMPING LATHE COMBINED WITH A ROLLING MACHINE—Frederick Berry, of Harrisburg, Pa.; I claim the roller, r, which brings the stamp lever, L, into action with the studs, a, when it falls off the leather on to the table, as the leather passes through the rolling machine, substantially as specified.

FEED WATER PUMPS—E. W. Ellsworth, of East Windsor Hill, Conn.: I claim the method of making a steam pump, when applied to maintaining the level of water in steam boilers, or of other liquids in similar vessels, regulate its own speed, by causing the liquid, when at or above the proper level, to apply resistance to the motion of the engine of the pump, that resistance being caused by the circulation of said liquid back and forth, through a narrow passage communicating between the above-mentioned boiler or vessel, and a variable cavity operated by said engine—said variable cavity being constituted by a piston and plunger working in a cylinder, as described, or in any similar manner, whereby substantially the same result is accomplished.

I do not claim the connection of the steam pipe of a pumping engine, with the boiler at the water line, whereby steam or water, or both fluids, pass constantly from the boiler, and are exhausted through the engine and by their different densities, regulate the speed of the engine, for the pipe which conveys the steam expended in working my engine has not such a connection, but my claim, as set forth.

SEED PLANTERS—Henry Wyant, of Knox Co., Ind.: I claim the employment of the seed cup, or ring, a, and spring, b, attached to and moving with the slide, H, in combination with the inclined plane, m n, of the beam and brush, M, operating in the manner and for the purposes set forth.

PAGING BOOKS, &c.—R. L. Hawes, of Worcester, Mass.: I claim the general construction and arrangement of the machine, that is to say, pivoting the lever, B, which carries the numbering wheels to the framework, and operating the wheels by means of the dog, P, the arm, h, and pin, m, in the manner substantially as set forth.

Second, in combination with the method described of giving the impression, by means of the revolving ribbon, s, I claim giving to each type an independent bed or platen, and supporting the platens upon springs, in the manner and for the purpose set forth.

PLOWS—George Watt, of Richmond, Va.: I claim the curved standard, when its front or concave side is rounded off, in combination with the undulating lines, x x x, extending from the point of the plow to the tail of the mold board, and when formed by the intersection of the two curvilinear surfaces of the mold board and the standard.

SEEDING MACHINES—James M. Kern, of Morgantown, Va.: I claim combining with a seed box provided with a double set of passages, substantially as described, a hinged center-board, for the purpose of sowing both small or coarse grain, separately, or both at the same time, or grain and fertilizers, as set forth.

CHURNS—Goodrich Lightfoot, of Elgin, Ill.: I claim the adjustable floats or buckets, b c, attached to the annular plate, H, which is secured to the shaft, B, the above parts being arranged as shown, for the purpose specified.

[A great number of patents have been granted for churns, and it is reasonable to suppose that considerable originality must be exercised to obtain one now. In this churn the floats are adjustable, and so arranged that the whole contents of the churn are equally exposed to the action of the atmosphere, and the butter is easily separated in a very short space of time.]

DIPPING CANDLES—C. A. McPhetridge, of St. Louis, Mo.: I claim dipping candles on a continuous wick from spools, E, by passing it through heated beeswax in vat, I, through gauge plate, J, and then alternately through heated tallow and cold water, and through steam gauge box, K, and then separating them by means of the cutters, c c, as described and set forth.

Secondly, I claim the steam chambers or floats, G, constructed as described, and for the purposes set forth.

SEED PLANTERS—Edwin Moore, of Avon, N. Y.: I do not claim the hollow arms, R, through which the seed passes from the hopper, for hollow armed wheels have been previously used for that purpose.

Neither do I claim operating the distributing device by means of radial rotating arms or rods penetrating the ground, for they have been previously used as a specific device for that purpose.

But I claim the hollow arms, H, provided with flaps, e, and beaks or shares, f, at their ends, the arms being attached to a hub, c, provided with passages, g, and cogs, h, and the perforated disk, E, and cut-off plate, F, underneath the hopper, D, the whole being arranged as shown and described, for the purpose set forth.

[This planter is adjustable to drop the seed at various distances apart. It is a rotary, very simple in its construction, and will plant the seed in rows both ways without having the ground furrowed or marked off It can be employed for planting various grains, and constructed at a very moderate cost.]

CONNECTING TUBES—Joseph Nason, of New York City: Several modes of joining the ends or straight parallel tubes to their cross connections have been hitherto employed, and are well known. In some cases the ends have all been threaded and screwed into the cross. They have also been joined with ordinary socket joints, and made tight with cement, or with flanges and bolts, and sometimes the cross tubes have been cast upon them.

I do not claim these modes, none of them being applicable to the objects contemplated in my invention.

I claim the mode specifically described, of joining the straight parallel tubes, a a and b b, to the cross tubes, A and B, by means of screws and plain cylindrical joints upon the tubes, a a, and screws upon both ends of the tubes, b b, whereby the tubes, b b, are made to hold the cross tubes, A and B, firmly in position, and the cylindrical ends of the tubes, a a, are left free to adjust themselves in their openings during the process of entering and screwing up the tubes, b b, and afterwards, when expanding unequally.

CAST STEEL—John Nevill, of New York City, assignor (through himself and Lemuel Curtis, of New York City, assigned) to the Damascus Steel Manufacturing Company, Croton, N. Y.: I claim the described process for converting wrought-iron into cast-steel, consisting essentially in the use of the various compounds of cyanogen and salammoniac, either separately or in combination with each other, or with other ingredients, when mixed and fused with the wrought-iron, which is to be thus converted.

GUTTA PERCHA CORD—James Reynolds, of New York City: I do not claim as new a mere combination of dies and rollers, as such, variously arranged, is common in the manufacture of metallic tubing and other articles.

But I claim the process described of finishing gutta percha cord, by means of the dies, D D', and grooved rollers C C, arranged and operating together, and on the cord, as described, the said dies being of larger diameter than the grooves in the rollers, and serving to close up flaws, draw and compress the cord, and equalize its size, while the smaller grooves in the rollers serve to slightly compress and give a smooth finish to the cord, and establish or sustain the feed of the cord, without risk of bruising, by attrition, through a windlass action, as specified, and by which combined action of dies and rollers the cord is stretched to its fixed point between the dies and rollers, as set forth.

[This machine is principally intended for the finishing of gutta percha cords, but it may be used for tubing by employing a mandrel with the die It reduces the gutta percha to the "fixed point"—the condition at which it will stretch no more, and when it has the greatest density. It produces a very superior cord, both as respects its appearance and strength.]

PRAIRIE PLOWS—Marshall Turley, of Galesburg, Ill.: I claim the arrangement of the standard mold board and side cutter, K, with regard to each other, and to the other parts of the plow, as that they will operate as set forth and explained.

CHARGING THE RECEIVER OF A LOCOMOTIVE WITH COMPRESSED AIR FROM FIXED STATIONS—Samuel Carson, (assignor to the American Railway Manufacturing Company,) of New York City: I do not limit my claim to the special construction and arrangement of the parts, as these may be greatly varied.

I do not claim the propelling of locomotives on railroads by the elastic force of compressed air, or other permanently elastic gas, nor to the charging of compressed air or gas into the receiver of a locomotive at given stations along the line of a railroad, when this is done by stopping the locomotive, to connect the receiver with the supplying apparatus, as these have long been suggested and described.

I claim the method, substantially as described, of charging the receiver of a locomotive, with compressed air or other permanently elastic gas, from fixed stations, whilst the locomotive is in motion and passing the station, by means of the self-adapting apparatus, substantially as described, or equivalents therefor.

PRINTING PRESSES—Charles G. Sargent, of Lowell Mass., and Abram Keach, of Boston, Mass., assignors to Abram Keach and Caleb M. Marvel, of Lowell, Mass.: We claim the described method of operating the bed by means of the pins, a a', and the forked lever, L, when the motion of the latter is controlled by the spring lever, b, arranged in the manner substantially as set forth.

Second, the wheels, Q' S' R' T', constructed as described, and operating in combination with the toes, e and a2, in the manner set forth, whereby the nipper chain is fed intermittently, and at the required moment receives a slight motion forward, for the purpose of opening one set and closing another set of the nippers, in the manner specified.

Third, I claim the described method of hanging and arranging the nipper chain, L', and the platen, D, upon the wheel, I2 and K2, and ways, N2, whereby the platen may be moved out of the way when it becomes necessary to change the form, as set forth.

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SEEDING MACHINES—Moses D. Wells, of Morgantown, Va.: I make no claim to the use of reciprocating bars for causing the movement of either rigid or elastic clearers and discharge apertures of seed planters.

But I claim the combination of the case with the swinging protruding agitators thereof, and the reciprocating bar contained within the case and actuating the vibrating agitators, substantially as and for the purposes set forth.

CYLINDER AND PISTON OF HYDRAULIC AND STEAM ENGINES—John Underwood, of Lowell, Mass.: I claim the cylinder and piston, made as described, and for the purpose set forth.

CATCHING FISH, &c.—Levi Van Hoesen, of Westville, Conn.: I do not claim separately, or in themselves considered, two jaws connected with a spring, for similar devices are employed in various kinds of traps.

I claim forming the two plates, C C, of the jaws and the stem or head piece, A, with portions of hollow spheres, d d b, substantially as shown, for the purpose of protecting the bait when the jaws are sprung, as described.

[This is an improvement in steel snap spring hooks. It is adapted to fishing for flounders, eels, and other fish that swim near the bottom, and also for fish that swim near the surface. It has been practically tested, and has proved highly successful.]

RE-ISSUE.

CURRY COMBS—Wm. Beach, of Philadelphia, Pa. Patented March 13th, 1849. Reissued Feb. 12th, 1850: I do not claim, separately, either trough-shaped comb bars or coinbs with open backs, but only in the combination set forth.

I claim the combining the trough-shaped bars, a a a a, which have the comb teeth ou their edges, with the folded strips of metal, b b, which form the transverse bars, and receive the wire through them, forming a square, open, or hollow back comb, as described.

I also claim the shank, constructed with the fastening hole, f, made by bending the wire, which saves the welding or drilling, and combined with the comb, as described, substantially, so as to act as transverse bars and guards to the ends of the combs.

MARBLE SAWING MACHINES—Jose Toll, of Locust Grove, O. Patented Sept. 9th, 1856: I am aware there have been, heretotore, machines for sawing marble in taper form, and make no claim to such.

But I claim the particular combination and arrangement of the fender, J J', with the adjustable guide pieces, when the same are constructed and arranged to operate in relation to each other, in the manner and for the purpose set forth.

SEWING MACHINES——Allen B. Wilson, of Waterbury, Conn. Patented Nov. 12th, 1830. Reissued Jan. 22d, 1856: I claim, first, the combination in a single machine of these three following elements, namely, a table or platform to support the material to be sewed, holding it for the action of the needle, and presenting it properly to the grasp of the feeding apparatus, a sewing mechanism proper consisting of a needle and shuttle, or their equivalent, and a mechanical feed automatic, and causing the cloth to progress regularly, to which the cloth is not attached, and so grasping the cloth that it may be turned and twisted by the hand of an operator, such twisting not interfering with the regular progression of the cloth, and the whole being constructed and acting together, and in combination with each other, substantially in the manner and for the purposes specified.

Second, I claim moving a shuttle so shaped and held by its race that jaws may embrace it by means of two jaws, which are alternately in contact with the shuttle, and are constructed more substantially in the manner set forth, making and breaking their contact without any aid from cams or springs, or their equivalents of such devices

And, lastly, I claim the double-pointed shuttle, substantially such as is specified, in combination with jaws for driving it, substantially such as are described, whereby the shuttle may be thrown alternately from opposite directions, through loops without practically disturbing the loop thread.

DESIGN.

COOKING STOVES—Samuel W. Gibbs, of Albany, N. Y., (assignor to A. H. McArthur & Co., of Hudson, N. Y.

NOTE.—In the above list of patents we recognize the names of thirteen patentees whose cases were prepared at this office. A new Circular, of importance to inventors and those about to apply for patents, we have just had published, which may be had gratuitously on application to this office.

Hay Forks.—Seneca Falls Manufactures.

MESSRS. EDITORS—In looking over a late number of your most excellent and invaluable paper, I saw that one of your correspondents, from Vermont, wished to learn where he could find a manufactory of hay forks, &c. I take the liberty to inform him that they are manufactured in every variety of style, of the very best quality, and in any quantity desired, in this flourishing village, by Messrs. Gould, Henion & Co. And permit me to say that hereafter, when you do not know where a given article is manufactured, about which inquiry is made of you, it may almost be safe to say that it is manufactured in Seneca Falls, for the manufacturers here, Downs & Co., Silsby, Mynderse & Co., Cowing & Co., J. S. Gay & Co., Powell & Co., Wescott & Co., Gould, Henion & Co., or some other of the large manufacturers here, do make a very great variety of goods, and from some of them almost any given article may be attained. This would not probably have been the case but for the fact that for the last few years they have all, either as firms or in a private capacity, taken and carefully read the SCIENTIFIC AMERICAN, and when they have heard a call through that medium for any new article, they have made it, advertised it, and put it in the market. SUBSCRIBER.

Seneca Falls, N. Y., December, 1856.

Cheap Mouse Trap.

MESSRS. EDITORS—Take a clay pipe, break the stem off close to the bowl and fill the bowl with cheese, or any material that will attract mice; then take a common glass tumbler (the larger the better,) and arrange your trap in the following manner:—Place the loaded pipe bowl on the floor or shelf where it is desired to set the trap, with the mouth from you; then place the tumbler with one edge resting upon the "slanting" end of the pipe bowl, and your trap is completed. The unfortunate mouse, following his nose, will crawl under the edge of the glass, commence nibbling at the bait, and, *presto*, he is in close quarters. This is a very economical and effective trap, the invention of a young man in my employ (Mr. E. Gardner,) and the most effective one I ever saw. I have caught not less than three hundred mice with it during the past summer, and if properly arranged it will never fail.

WM. NORTON.

Huntington, Ind., December, 1856.

The Woodworth Patent.—Lobbying in Congress.

MESSRS. EDITORS—I learn that another attempt is now being made in Congress to have that monopoly, the Woodworth Patent, renewed. I have been told boldly by those who own rights of the Norcross Patent, that it is for their interest to have the Woodworth Patent renewed, and that money will be given them for this purpose. The same story is told of others who own patents of planing machines. Some of them have been coaxed into a support of the Woodworth Patent only to find themselves drawn into vexatious litigation in case it should be extended. They are mere cat's paws to pull the chesnuts out of the fire for the exclusive benefit of those who now hold the monopoly.

I have been informed of one person who has been publicly denouncing the Woodworth extension, and who has privily given $1000 to assist in carrying the scheme through Congress. I have it direct from a respectable member of the Illinois Legislature, that the buying of votes was no secret during the last session of Congress, and that enormous sums of money were paid to those who pledged themselves accordingly. The proprietors of the patent are not going to lose this sum of money if they can help it. I have been informed that they have $500,000 pledged to obtain a majority to obtain the monopoly. Will they be able to get this monstrous wrong fastened upon the country for another term by a special act of Congress? If they do, our government may be set down as much worse than that of an absolute monarchy. Such a scheme could not be carried out in Russia, or any of the European monarchies of the present day. The men who, for gold, would sell the liberties of the people now, are worse than Arnold. He had some temptation to commit treason; they have none, and are without excuse.

This patent has been twice extended already, and has been altered from its original meaning since the original inventor died, and it has become an infliction to the community for the benefit of parties who never paid the inventor a single cent, and whose only object is to benefit themselves. It has now been in existence for a quarter of a century, and the people have paid those who have owned it many millions of dollars, and now it is proposed to extend it for seven years longer, during which period the people would be taxed tens of millions more. The tax would have to be paid by every man, woman, and child in the country. The people do not, generally, view this question in its true light. Every man that builds a house, ship, or boat, pays his share of such a tax, and the city of Chicago alone will pay no less than $158,000 of tax to this monopoly for the present year. Single individuals have paid from one to two thousand dollars in this city for the planing tax on the timber of their own houses.

The tax which Congress will impose on the people, if this monopoly is extended, will amount to more than would purchase, at government price, twice as much land as there is in the whole territory of Kansas, and yet the press of our country, with the exception of the SCIENTIFIC AMERICAN, is *mum* on the subject. Only for its unyielding love of truth and justice, this monopoly, it is believed, would have been renewed and fastened upon the country before this time.

The people should arouse themselves to a thorough sense of the magnitude of the evil which this monopoly, if extended, would inflict upon the country. I know that many persons are watching Members of Congress with keen eyes, to see how they will act when the question is brought before them. The application for the extension of the monopoly should be kicked out of the Halls of Congress like a foot-ball; and if the representatives of the people have any respect for themselves and the rights of the people, this is what they will do with it. S. J. R.

Chicago, Ill., 1856.

Providing Fencing Timber.

MESSRS. EDITORS—The scarcity and high price of timber of late has created considerable anxiety and solicitation on the part of farmers as to the future supply of fencing materials. In many sections of the country the supply of timber is already nearly exhausted. I would suggest the following as a plan entirely practicable and economical. It is merely to set out suitable trees along the fences of farms, and replant them as often as they are cut down. A farm thus stocked would keep up a continual supply of timber forever, in quantities more than adequate to its own requirements. I would suggest the chesnut and locust as being very durable, and of very rapid growth. Each of these can be very easily propagated from the seed and nut.

I have lately heard that the Illinois Central Railroad Co. have planted a large number of trees along the line of their road, with the view of a future supply of timber for crossties, &c. It has long been a matter of surprise to me that the same plan has not been adopted by railroad companies in general.

JOSEPH WILCOX.

Joy Mills, December, 1856.

N. B.—In your edition of Nov. 29th, I observed that fat pork has been used as a lubricator upon the journals of locomotives, with success. I have for several years used it on heavy journals with satisfaction, where the best sperm oil would not keep them from heating. It would be well, perhaps, to remark that salt pork is better than fresh; it should also be boiled. J. W.

[The suggestions of our correspondent respecting the planting of timber for fences we recommend to our farmers. We hope they will be pretty generally acted upon next spring—and winter is the season to lay out plans for spring work. Beltings of trees on farms also afford shelter for crops from high winds, and are well known to be beneficial in many other respects.

Our Trade, Coinage, and Income Debt.

The following useful statistics, taken from the Report of the Secretary of the Treasury, will show almost at a glance, the amount of our national income, expenditure, debt, coinage, and trading capital:—

"During the last fiscal year, the receipts into the treasury were $73,918,141·16. With the balance in the treasury from the previous year, the aggregate of available funds amounted to $92,850,117·47. The expenditures of the year reached $72,948,720·02. The balance in the treasury at the close of the year was $19,901,-325·45. The actual and estimated receipts of the current year reach pretty much the same figures, and a balance of $22,315,222·81 being in the treasury on the 30th of June, 1857, is calculated.

The national debt which, on the advent of the administration, was $69,127,937·27, and was subsequently increased by the sum of $2,750,000 to liquidate the Texas debt, giving a total of $71.877,937·27, has been reduced to the sum of $30,963,909·64; in addition, however, we have a liability, under Indian treaties, amounting to $21,066,501·36, which, as it becomes payable, constitutes an item of annual expenditure, and is estimated for by the Interior Department.

The annual tunnagement shows an aggregate of 340,349 maritime tunnage, which is less than the previous yearly statement. But this is accounted for from the fact of there having been a thorough revision of the records of former years, the correction of errors, etc. The revised statements of former years show a regular progressive increase with our commerce and population.

The total gold and silver coinage of the U. S. Mint, since its establishment in 1793, has been $549,341,914·14; and the entire import of gold and silver, since 1830, has been $293,505,743, and the export $43,587,354; there being no account of the imports and exports prior to 1820.

There are 1398 State banks, with a chartered capital of $344,000,000, and a circulation of nearly $200,000,000. The Superintendent of the Mint estimates the gold and silver remaining in the country at $200,000,-000, while the Secretary estimates it at $250,-000,000."

The Iron Structure for Government.

A building of cast-iron, for the purposes of a Marine Hospital, has been ordered by Government to be built at New Orleans. The building will be perfectly fire-proof throughout. It is well remarked that this very judicious encouragement given to the enterprise by the Secretary of the Treasury will initiate the use of iron in the public architecture of the country.

The Steam Battery.

The great Steam Battery of Stevens, at Hoboken, for which $87,000 were appropriated at the last Session of Congress, does not appear to progress very fast. This infernal steam battery appears to be a disgrace to the spirit of our people. It has been a great number of years in the course of construction, has cost thousands of dollars, and only a miserable abortion has been the result of all this money and time. The best thing that can be done with it, is to blow it up and commence anew.

A Wrinkle About the Age of Horses.

The editor of the *Southern Planter* says: "the other day we met a gentleman from Alabama, who gave us a piece of information as to ascertaining the age of a horse, after it has passed the ninth year, which was quite new to us, and will be, we are sure, to most of our readers. It is this:—

After the horse is nine years old, a wrinkle comes on the eyelid at the upper corner of the lower lid, and every year thereafter he has one well defined wrinkle for each year of his age over nine. If, for instance, a horse has three wrinkles, he is twelve; if four, he is thirteen. Add the number of wrinkles to nine, and you will always get it. So says the gentleman; and he is confident it will never fail."

Coal Oil for Lighthouses.

The Breckenridge Coal Company have offered to supply the Lighthouse Board with 95,000 gallons of oil as a supply for the coming year. They offer to sell it for a lower price than the best sperm, and that it shall have as excellent properties. The Board never having used such oil for illumination, very prudently ordered a test of its qualities before making the contract. If the result proves satisfactory, the contract will no doubt be made. The supply of all kinds of oil does not seem to be sufficient for the increased demand, as the price has been steadily advancing during the past ten years.

Expensive Chinese Sugar Cane Seed.

A correspondent of the New York *Tribune*, writing from Washington, states that Asa Whitney, projector of the Pacific Railroad, resides near that city, and keeps a dairy with which he now supplies the people of Washington with milk. He also states that he raised an hundred bushels of the seed of the Chinese sugar cane, this season, and that it was all purchased by the Commissioner of Patents at the rate of $5 per bushel,—a far more profitable crop than wheat.

Louisville Steamboats.

Thirty-six new steamboats were built this year at Louisville, Ky., at a total cost of $1,021,000. Louisville is a famous place for steamboat building, and her steamboat engineers have a high reputation.

A fatal railroad collision took place at Alliance, Ohio, on the 8th inst., by a train on the Cleveland and Pittsburg Railroad running into another on the Ohio and Pennsylvania Railroad at a crossing and at a station. Ten persons were killed. The accident was caused by the most gross carelessness. The Pittsburg train stood across the track, and the Cleveland train, which should have stopped, rushed into it at full speed.

The *Saturday Evening Post* commences a new campaign on the 1st of January. It has long been a favorite journal. See advertisement in another column.

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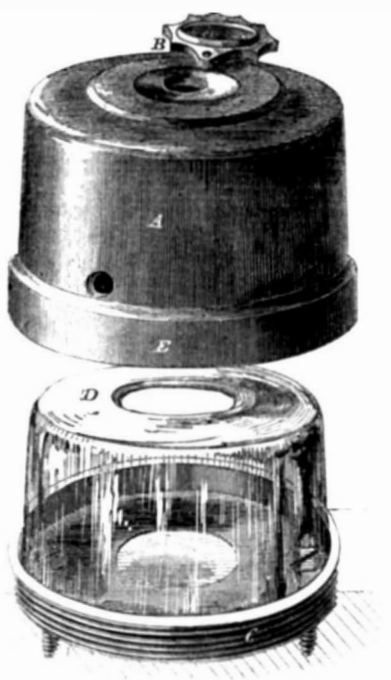
New Inventions.

Patent Inkstands for Desks.

The accompanying engraving are views of an improved mode of securing inkstands to desks of schools, for which a patent was granted on the 12th of August last, to L. R. Satterlee, of Rochester, N. Y.

The nature of the invention consists in providing an outer case for the inkstand, which shall protect it from injury and dust, render it immovable by children in school, and at the same time afford perfect access to the ink, and every facility for cleaning the ink holder or bottle.



The top figure in the engraving is a perspective view of the outer case, or cap which is of cast metal. A is the main part of it; B the small swivel lid of the opening at the top for dipping the pens into the ink. The bottom flange, E, is part of the case, which has a screw thread in its interior. Figure 2 shows the ink holder, D, which is of glass and of a common form. It is seated on the bottom part, C, of the case, A. This bottom part is secured to the desk by small screws, as shown; then the ink holder, D, is set into it as shown, and case A is then set over D, and screwed on to the bottom, C, thus securing the inkstand firmly to the desk, so that it can not be moved by the scholars. The case is screwed firmly on its seat, with a small pin wrench, the pin being inserted into the small hole shown in A. Children, therefore, will not be able to remove it by hand, but they will have free access to the ink with their pens. This case can easily be unscrewed by the master, to fill up the ink holder, or to clean it out. A piece of coarse woolen cloth or fur is placed under the seat, C, in winter, and the lid, B, is made to fit air-tight, thus providing an excellent non-conducting medium of a small air space around the glass inkholder, to prevent the ink from freezing during cold nights—a very useful and important consideration. As the immobility of this inkstand is certain, its durability is well provided for, and it effectually prevents scholars from wasting the ink and splashing it over the desks, copybooks, and their clothes, by the tipping over of the inkstand by the mischievous imps.

For further information address Mr. Satterlee, at Rochester.

Improvement in Saw Sets.

This figure is a perspective view of the improved saw-setting instrument of L. Brooks, for which a patent was obtained on the 17th of last June.

A B are the two arms or handles, and C D are the two jaws, the one working inside of the other, on a pivot. S represents a section of a saw grasped between the jaws—part of it being removed at the middle to show both jaws. E is an adjustable angle bed placed in a cavity in the jaw, C; it gives the exact set to the teeth of the saw. F is a set screw, by turning which in the jaw, the angle bed, E, is set to the proper angle at which the saw teeth are desired to be set. G is an adjustable spring gauge. It is inserted between the teeth of the saw, and gauges them from their roots or base. I is a slot in it, in which the adjustable screw, H, is inserted for setting the gauge for larger and smaller saw teeth.

To use this instrument, the angle bed, E, is adjusted by screw F, to set the saw teeth to the angle desired. The saw is then grasped between the jaws; (the dotted lines on jaw C, are intended to represent the saw teeth in front of the jaw, with the gauge, G, in the throat between two teeth.) By pressing on

BROOK'S IMPROVED SAW SET.

the handles, A B, the tooth on the bed, E, will receive its proper set, and the jaws then spring back, relieving the saw; the second tooth from the one set is now placed on E, and set, and so on until the teeth on one side of the saw, are set. The other side of the saw is now grasped between the jaws, and every second tooth operated in the same manner, thus setting all the teeth of the saw perfectly true, with rapidity and with ease. The angular bed, E, makes it universal in its application to all saws to set large or small teeth. The pressure of the jaws comes entirely upon the plate of the saw, not upon the tooth, as in some other *sets:* the teeth are thus never bruised, blunted, nor injured in setting. The spring gauge guides the teeth of different sizes into the proper position, and prevents them from slipping during the act of setting. It is a very simple and correct saw-set; it can be used with facilty, readily adjusted for different saws, and it is not liable to get out of order.

For further information address J. B. Morrell, agent, No. 304 Broadway, New York city.

Chargers for Shot Pouches.

The accompanying figures represent an improved Charger for the shot pouches of sportsmen. Figure 1 is a perspective view of one of the chargers detached from the shot-bag, with a part of it removed, to show the interior.

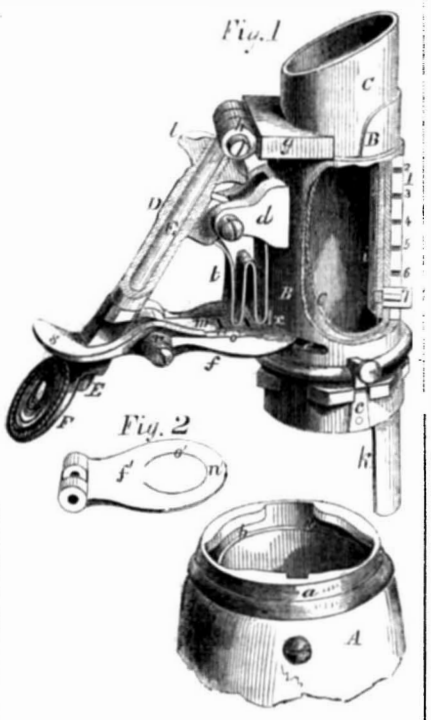


Figure 2 is a perspective view of another lower slide, *f'*, with the circular slot, *o'*, cut in it, for the purpose of allowing the edge, *n'*, to glance more readily over large or small shot.

Figure 3 is a perspective view, to show the adaptation of the charger to double pouches, which could not be done in the ordinary screw charger.

A represents the base of the charger with the neck of the pouch just below it. A swell or collar, *a*, is made at the upper part of the base piece, and a circular groove, *b*, is formed on the inside of said collar, into which a spring catch, *c*, takes, to hold the upper to the lower portion of the charger, and to facilitate the removal of said upper portion when the pouch or bag is to be filled with shot.

FIGURE 3.

The charger proper is made of two cylindrical tubes, viz., an outer one, B, and an inner one, C. The outer one, B, being provided with lugs or ears, *d*, to which the lever, D, is pivoted or hinged, and a slot or opening, *e*, through which the lower slide or gate, *f*, passes; it is, moreover, provided with a narrow vertical slot, 1, from which branch opposite to each other horizontal slots, 2 3 4 5 6, or more, into which a peculiarly shaped spring catch attached to the inner cylinder, C, takes, to hold it when adjusted to the proper charge of shot that may be desired for the time being. The inner tube or cylinder, C, fits loosely, but neatly within the outer one, B, and projects above the top of the outer one. Near the top of the one, C, is a projection, *g*, in and through which the slot or opening for the upper slide or gate, *h*, is made; it has also upon it the spring catch, *i*, above referred to, for admitting of adjustment within the outer tube, and for holding the two together when adjusted. This spring catch, *i*, has a tongue, 7, at its outer end, with shoulders at the base of the tongue, so that when the inner tube is to be raised or lowered on the outer one, the tongue, 7, is pressed into the vertical slot, 1, and the button or wide part of the catch, *i*, will slip into the horizontal slots, 2 3, &c., allowing the inner tube to be raised or lowered, and when at the proper hight, by releasing the tongue, 7, of the catch, it will spring out, and allow the wide portion to take into the cross slots again, and there hold it. This kind of fastening admits of raising or lowering the inner tube in a vertical line instead of the double motion, both vertical and horizontal, required with the ordinary bayonet fastening, as commonly used. The inner tube, C, has a portion, *k*, of its lower part elongated, so that the lower gate or slide, *f*, may always shut against it, however high or low within its limit of adjustment it may be placed. The manner of securing the upper to the lower portion of the charger may be substantially the same as that shown in a former patent of August 1st, 1854.

The lever, D, is hollow or tubular, and the rod, E, to the upper end of which the upper slide, *h*, is hinged, passes through it, so that the two slides may be moved nearer to or further from each other, the lever and rod being held together when adjusted by a tightening screw, *l*; the lever, D, is provided with a thumb piece, F, for operating it, and through it the slides, *f h*, which are so arranged—one on each side of the fulcra—that when one is shut the other is open, and *vice versa.*

The lower slide, *f*, may be made of thin steel, so as to have elasticity and a greater facility for passing through the shot, to separate the charge that is to be used from that in the pouch or bag. The center portion of the slide, *f*, is cut or punched out, and a piece, *m*, provided with a series of small holes, *n*, neatly fitted into said opening. A slot is also cut in the slide, *f*, so as to separate and make a spring *o*, out of the portion so cut, which spring bears against the inserted piece, *m*, raising it slightly upward, and throwing the openings, or one of them, against a small bolt or pin, *x*, fastened on the outer tube, B, which locks the slide, *f*, against accidental opening until the user desires to open it. The slide, *f*, is pivoted at *r* to the lever, D, and on the same pivoting pin is hung the piece, *m*, which piece, *m*, has a lever, *s*, projecting rearward, and close to or over the thumb piece, F.

As represented in fig. 1, the slide, *f*, is locked, and any brush, twig, or other thing pressing against the thumb piece, F, or the lever, D, would not move it, or the one, *h*, above, which would lose a charge of shot. But to make the unlocking of the slides an easy operation to the user, the lever, S, projects over the thumb piece, F, so that as the thumb is slipped upon F, it raises up the lever, *s*, and throws down the piece, *m*, from the bolt, *x*; by then pressing on the thumb piece, the slides work, and by releasing the thumb piece the lever and slides return again to the locked position shown in fig. 1. A folded or crimped spring, *t*, is arranged between the outer tube, B, and the lever, D, for throwing back the slides and lever, when the thumb has been removed from the thumb piece. By crimping this spring, *t*, it allows the use of a longer spring, which has more elasticity, and is less liable to break than those ordinarily used.—The series of holes, *n*, are for furnishing a stop at any one of the changes of the charger, the position of the slide, *f*, varying as the charger is changed or lengthened.

This is a most convenient and excellent shot charger. Patented Sept. 2d, 1856. John M. Hathaway, of this city, is the patentee, from whom more information may be obtained by letter addressed to No. 52 Barrow street.

Removing Scale from Steam Boilers.

R. B. Lindsay, of London, has obtained a patent for removing scale from the interior of steam boilers by heated air, or highly heated steam. All the water in the boiler is run off, and the boiler is then left to cool. When cold, the highly heated air or steam is introduced by a pipe, when, after a suitable time being allowed for it to take effect, it is stated that the scale cracks off and leaves the plates clean. The scale is then blown out with water and steam through the blow-off cock.

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Scientific American.

NEW YORK, DECEMBER, 20, 1856.

Liquid Stone.

Stone is rather a *hard* subject about which to write, but we intend to deal with it in a liquid capacity at present. We have received a communication from a correspondent in Illinois, in which it is stated, he "wishes to procure some silicate of potash,"—liquid quartz or sand, as it is sometimes called. He has endeavored to manufacture it, but although he tried a number of experiments he failed to produce the article. He states that it is a substance which, if it could be produced cheap, would be the means of making gravel walls the best and most durable for houses. To expect the reduction of such hard grains as those of quartz sand to a liquid, like sugar dissolved in water, appears to be something which may justly be termed "a hard expectation." However, the thing can be done, and has been done, and we have a bottle of the limpid stone liquid ensconced not many feet from where we are writing. It was manufactured by the process of Benj. Hardinge, Esq., formerly of Cincinnati, O., but now of this city, who has secured patents both at home and abroad, and who has actually manufactured hogsheads of the liquid. He has never manufactured it for sale, nor are we aware of any intention on his part to engage in this particular business; he has done it for the purpose of showing that quartz can be rendered into liquid at no very great cost and that gold and all the precious metal which rock contains can be extracted from its matrix; and that this liquid can be employed as a building material, for the purposes suggested by our Illinois correspondent (and he is not the only one who has written us upon the subject), and also for manufacturing artificial stone blocks of great beauty.

White sand is composed of grains of quartz rocks reduced to small crystals by attrition. By the process of Mr. Hardinge, quartz rock is first roasted, then plunged into cold water as is practiced with common ores—to render it friable. Then it is pulverized in a mill, from which it is carried in a finely subdivided state into a peculiar steam-tight cauldron, containing caustic lye. Here it is acted upon by steam heat, and the chemical solvent, and dissolved into a liquid state, like crystals of salt in hot water. It may be asked, "what is the use of being at such trouble to reduce stone to a liquid; what use can be made of this stone liquid?" If we take some common salt and dissolve it in water until we obtain a strong brine, and then apply it with a brush to a stone wall, the water will soon evaporate and leave the wall coated with salt in fine crystals. But as the salt is soluble in pure water, it will soon be washed away from the wall with rains. If instead of salt, we dissolve quartz, in the form of sand, or powder, and apply this liquid to a wall, its water of solution will also evaporate, and leave a coat of crystal glass on the wall; but as it is insoluble in pure water, it cannot be washed off with rain. Its usefulness, then, as a coating for gravel walls, which are easily penetrated with rains, as suggested by our Illinois correspondent, is therefore apparent. This is one of the intended applications of liquid stone or soluble glass.

But the reduction of quartz to a liquid state by the process referred to, involves a vast range of other applications to the arts—chemical and mechanical. A pamphlet has just been published by the inventor, from which we learn that the process is intended for special application to reduce gold quartz to a liquid state, and extract every particle of the precious metal from it. Prof. John L. Moffat, late U. S. Assayist, certifies that he has investigated the philosophy of the process, and has satisfied himself of the practicability of reducing quartz rock to a liquid, limpid and clear as pure spring water, by means of humid heat and some simple solvents, and other chemical agents, at a very small expense; he saw hogsheads of the liquid quartz at Mr Hardinge's premises—it was equal parts of water and stone. "In a liquid state, if left to stand in a cistern, all metals will fall to the bottom, by which means every particle of gold or other metal may be obtained and melted in bars."

In another part of the pamphlet, it is stated in reference to this application of the process—"In less than one year from this date, more than ten millions of gold will be obtained from gold-bearing quartz, where a million is now obtained."

This is certainly a brilliant expectation, and if fully realized, may yet lead to gold becoming as common as copper and tin now are. But this is not the only bright prospect pointed out to be yet achieved by this discovery. Mr. Hardinge, in another part of this pamphlet, says:—"As an illustration of the architectural and ornamental uses to which my inventions may be turned, by using the liquid rock after separating the gold, I intend, at some suitable locality to erect a model edifice of moderate size, of materials the most beautiful and durable which imagination can conceive—equalling in brilliancy any and all of the precious stones except the diamond, and yet at a cost for material not exceeding that of brick."

This house, it is contemplated, will be a realization of the famous palace in the Oriental story of "Alladin's Wonderful Lamp." Pillars, capitals, cornices, architraves, mantels, are to be formed of agate, jasper, and porphyry. The table tops are to be sapphire and amethyst, embedded in bands of opal. The onyx, the garnet, the topaz, and ruby are to be common decorations of doors, chairs, and other furniture; and all this produced by the use of the liquid quartz, as a base or binding agent. We really hope that such bright expectations will not be disappointed. We have seen the liquid stone reduced in a few minutes, by Mr. Hardinge, to a plastic state, capable of being molded into any form. Faraday, and Marshall Hall, of London, it is stated, have endorsed the usefulness of the discovery; supported by such authority, it really appears to be one of the grandest discoveries of the present age.

Books of Patents.—Noble Present to the Astor Library.

The Astor Library, this city, has been presented with a valuable donation of 274 volumes—137 volumes octavo, and 137 volumes folio—containing the printed specifications and drawings of all the patents granted in Great Britain during the years 1852–5. These are accompanied with index volumes to all the patents granted from 1617 to 1853. By an act of the British Parliament in 1852, the Commissioners of Patents were required to cause the specifications for patents to be printed, and plates of the corresponding drawings to be made. They began with the patents granted in 1852, and have completed them up to January, 1856.

The whole of this invaluable and truly beautiful work has been published under the direction of Bennett Woodcroft, Esq., the Superintendent of Specifications, and it is so perfect that it would not be possible to point out in what respect it could be improved.

The volumes are all bound uniformly in red Turkey morocco, and the drawings mounted on strong white calico, in such a manner that the whole plate spreads open without any fold. The Commissioners are now going on with the specifications and drawings for the years previous to 1852, and we believe the same liberality will be extended with the continuations.

This is one of the many instances of the liberal spirit which has been manifested by the British government in the distribution of their numerous costly publications. The only condition attached to their gift is that the library should be free to the public. The Astor Library is indebted to Mr. Buchanan, when he was our Minister in London, for making known to the Commissioners of Patents that it was free, and this simple assurance secured for it this great work; and Dr. Cogswell, the gentlemanly, learned, and indefatigable librarian, feels proud of it, and so may our whole city.

It was a fortunate thing for the people of Britain (and our people also) that Mr. Bennett Woodcroft was selected to superintend the patent business of the London Patent Office, He is "the right man in the right place."—These volumes afford evidence of his taste, ability, industry, and liberal spirit.

The British Commissioners of Patents, appointed according to the new Patent Law, consist of the Crown law officers, and Master of Rolls. The officers exercising these powers under the new law have been characterized by broad and liberal sentiments. The last number of the London *Mechanics' Magazine* pays a handsome compliment to one of them—the Ex-Attorney General—Sir Alexander Cockburn, who has been promoted to the Chief Justiceship of the Court of Common Pleas. In deciding many very delicate and important questions belonging to inventors, he was always courteous and impartial, always exhibiting solid good sense and good temper—qualities of mind without which no man should be allowed to fill an office connected with such subtle matters as belong to inventions, and respecting which so much patience and knowledge are required.

Fusible Plugs for Boilers.

It has always been very difficult to obtain a proper fusible plug for steam boilers. Lead and tin—metals employed to form fusible plugs—do not fuse until high temperatures are obtained, tin requiring a temperature of 440° Fah., and lead 600°. These temperatures correspond to the heat of steam under a pressure considerably above the maximum strength of boilers. Plugs of these metals are therefore only suitable for being placed in such a position in the flue of a boiler, that when the water falls below the proper line, and the flue becomes over-heated, they will melt. They are unsuited for safety by fusing when there is an over-pressure of steam. As the pressure of steam is according to its temperature, it is very desirable to have a fusible plug that will melt by the heat of the steam when it attains to a pressure near to the maximum strength of the boiler. Hitherto, a reliable fusible plug of this kind has not been obtained. A plug that will fuse at any temperature, from the boiling point up to a very high heat, can be manufactured, but by constant use, for a short period of time, in a steam boiler, it loses the property of fusing, and thereby becomes useless. Such plugs are generally alloys, or rather amalgams—mercury being employed as the basis of their composition. A fusible plug, containing mercury, is not homogenous; the pressure of the steam forces the mercury out from the metals with which it is combined in the plug, thus leaving it porous, very difficult to fuse, and totally unfit to perform its intended function. This is the reason why fusible plugs are held to be ineffectual as safeguards against explosions of steam boilers from over-pressure of steam. A fusible plug that would meet all the demands made upon it for correct action and safety, would be a desideratum. This question has engaged the attention of our government for many years, and it still occupies the attention of its engineering officers. The Inspectors of Steamboats called in the services of Prof. Booth, of the Mint in Philadelphia—an eminent chemist—about two years since, in relation to fusible plugs, but so far as we have been able to learn, he has not yet arrived at a truly satisfactory result. We perceive that an improvement in the construction of such plugs has recently been invented in England, by James Marsh, of Manchester, but whether it will really accomplish the exact objects required, we cannot tell; it requires experiments to determine such a question. We will describe it, so that our engineers may experiment with it and test its qualities. The improvement consists in making the fusible plug of a tapering form, and arranging it in the boiler in such a manner that the pressure will come upon its smaller end, or area. This form of plug, apparently, subjects it to but little compressive action, so that when softened or rendered partially fused by the heat, the more fusible portion of the alloy will not be blown out. We hope this form of fusible plug may meet the requirements of safety in steam boilers.

A company has been formed in the city of London, for manufacturing boots and shoes by machinery.

Manufacturing Steel.

On the 27th of May last an American patent was secured for a process for manufacturing steel from cast-iron, by F. Uchatius—an Austrian military officer. This invention we described on page 309, last volume, SCIENTIFIC AMERICAN, in such a manner that any of our iron refiners might easily test the process, and thus decide its value. If none of them have tested this invention, it is but little to their credit, as it affords evidence of a lack of enterprise and enthusiasm in this business on their part. If any of them have tested it, we have not been able to learn the results of their experiments.

A Commission appointed by the French government has tested the process at the workshop of the Paris Northern Railroad, and has pronounced a most favorable judgment upon it. It has also been tested at the Albion Works, London, and an equally favorable opinion pronounced upon it.

The best English steel is not manufactured from English, but Swedish and Russian iron. This invention, it is asserted in some English papers, will render England independent of other countries for iron to make good steel, as it can be manufactured as well from English or East Indian pig iron. It is also stated that steel can be manufactured by this process at a comparatively low cost, and that many parts of machinery, such as shafting, now made of iron on account of its greater cheapness, will soon be made of steel.

We again call the attention of our iron manufacturers to this process; they will find it described on the page referred to, so that they can test its value. If it is as valuable as some of the English and French journals assert it to be, there is no use of importing any more steel from Europe; it can be manufactured from our own pig iron, and sold at a much lower price than the foreign. The question, we believe, is one of cost entirely; we have no doubt but good steel can be manufactured by the process—but how cheap? That is the important question to be decided. We are of opinion that the cheapness of the process has been exaggerated by the French Commission and by some of the English journals. Those who have tested it in Europe have operated on too small parcels, and have not taken all the expenses into consideration in their decisions.

Death of a Man of Science.

The death of M. Goujon, of the Observatory of Paris, is announced. Although only 33 years of age he was not undistinguished in astronomicol science. Amongst other things he discovered a comet, demonstrated the periodical appearance of Brorsen's comet, assisted in determining the difference of longitude between Paris and Greenwich, &c. He was for some years secretary and assistant to Arago.

Health of Dr. Kane.

The recent news from Europe states that Dr. Kane had sailed from London for the West India Islands, by advice of his physicians, on account of his health. He had been very unwell, and it is believed that the hardships to which he was exposed in the Arctic Regions have sowed the seeds of consumption in his system.

Opponents of the Woodworth Patent Extension must not fail to write urgently to their Members of Congress, in opposition to this scheme. Write at once. No time is to be lost.

SPLENDID PRIZES.—PAID IN CASH.

The Proprietors of the SCIENTIFIC AMERICAN will pay, in *Cash*, the following splendid Prizes for the largest Lists of Subscribers sent in between the present time and the first of January, 1857, to wit

For the largest List,	$200
For the 2nd largest List,	175
For the 3rd largest List,	150
For the 4th largest List.	125
For the 5th largest List,	100
For the 6th largest List,	75
For the 7th largest List,	50
For the 8th largest List,	40
For the 9th largest List,	30
For the 10th largest List.	25
For the 11th largest List,	20
For the 12th largest List,	10

Names can be sent in at different times and from different Post Offices. The cash will be paid to the order of the successful competitor, immediately after the 1st of January, 1857.

☞ See Prospectus on last page.

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The Growth of Machinery.

Emerson, in his "English Traits," has a striking and curious chapter on the above subject, from which we extract the following:

"'Tis a curious chapter in modern history, the growth of the machine shop. Six hundred years ago, Roger Bacon explained the precession of the equinoxes, the consequent necessity of the reform of the calendar, measured the length of the year, invented gunpowder, and announced (as if looking from his lofty cell over five centuries into ours,) "that machines can be constructed to drive ships more rapidly than a whole galley of rowers could do; nor would they need anything but a pilot to steer them. Carriages also might be constructed to move at an incredible speed, without the aid of any animal. Finally, it would not be impossible to make machines which, by means of a suit of wings, should fly in the air in the manner of birds." But the secret slept with Bacon. The six hundred years have not yet fulfilled his words. Two centuries ago the sawing of timber was done by hand; the carriage wheels ran on wooden axles; the land was tilled by wooden plows. And it was to little purpose that they had pit coal, or that looms were improved, unless Watt and Stephenson had taught them to work force pumps and power looms by steam. The great strides were all taken within the last two hundred years.—The "Life of Sir Robert Peel," who died the other day, the model Englishman, very properly has for a frontispiece a drawing of the spinning-jenny, which wove the web of his fortunes. Hargreaves invented the spinning-jenny, and died in a workhouse. Arkwright improved the invention, and the machine dispensed with the work of ninety-nine men; that is, one spinner could do as much work as a hundred had done before.

The loom was improved further. But the men would sometimes strike for wages, and combine against the masters, and, about 1829 -'30, much fear was felt lest the trade would be drawn away by these interruptions, and the emigration of the spinners to Belgium and the United States. Iron and steel are very obedient. Whether it were not possible to make a spinner that would not rebel, nor mutter, nor scowl, nor strike for wages, nor emigrate? At the solicitation of the masters, after a mob and riot at Staleybridge, Mr. Roberts, of Manchester, undertook to create this peaceable fellow, instead of the quarrelsome fellow God had made. After a few trials, he succeeded, and, in a creation, the delight of mill owners, and destined, they said, "to restore order among the industrious classes;" a machine requiring only a child's hand to piece the broken yarns. As Arkwright had destroyed domestic spinning, so Roberts destroyed the factory spinner. The power of machinery in Great Britain in mills has been computed to be equal to 600,000,000 men, one man being able, by the aid of steam, to do the work which required two hundred and fifty men to accomplish fifty years ago. The production has been commensurate.

England already had this laborious race, rich soil, water, wood, coal, iron, and favorable climate. Eight hundred years ago, commerce had made it rich, and it was recorded, "England is the richest of all the northern nations." The Norman historians recite, that "in 1067, William carried with him into Normandy from England more gold and silver than had ever before been seen in Gaul." But when to this labor, and trade, and these native resources, was added this goblin of Steam, with his myriad arms, never tired, working night and day everlastingly, the amassing of property has run out of all figures. It makes the motor of the last ninety years. The steam pipe has added to her population and wealth the equivalent of four or five Englands. Forty thousand ships are entered in Lloyd's lists. The yield of wheat has gone on from 2,000,000 quarters at the time of the Stuarts to 13,000,000 in 1854. A thousand millions of pounds sterling are said to compose the floating money of commerce. In 1848, Lord John Russell stated that "the people of this country have laid out £300,000,000 of capital in railways, in the last four years."

Mr. Emerson has made a mistake respecting the inventions of Hargreaves and Arkwright—the former is the inventor of the mule frame, the latter that of the *throstle frame*—two different machines; both spin cotton, to be sure, but they are entirely distinct, and both are used in different factories. Roberts, of Manchester, is not the inventor of the self-acting *mule frame*, but Messrs. Eaton, of that city; but their first machines were very complex, and were not very successful. Roberts, in 1830, improved upon them, making them more simple and really successful, for which he deserves great credit. The self-acting mule, however, has not destroyed the labor of the hand-spinner. There are more hand-mules still in operation than the self-acting kind—all fine numbers of cotton are still spun on the hand mule.

Compasses on Iron Ships.

On the steamer *Persia*, which is an iron vessel, the compass has been a subject of curiosity to every one who has examined it, and we have been interrogated a number of times regarding the principle of its construction. It is the invention of William Graham, of Glasgow, and we learn from the London *Engineer* that he has recently obtained a patent for an improvement on it, a former patent having been granted in 1854. This invention consists, first, in correcting the attraction; secondly, in adjusting the compasses. The first part consists in laying a number of corrective magnets radially around the needle platform. These corrective magnets are capable of minute adjustment, to suit the corrective action required, by screws. The center point, carrying the compass card, is adjustable vertically in the bowl of the compass, so as to enable the shipmaster to set the card and its needle at any desired hight, to rectify the heeling deviation, when any exists. Or, instead of thus shifting the center-point, the gimbles, or points of suspension, may be fitted with vertical adjusting apparatus to gain the same end. The operation of adjusting the compass on board ship is performed this way: When the compass is placed on deck and properly fixed fore and aft, corrective magnets are disposed, after the manner already described, one on each side of the compass card. The ship's head may then, for example, be turned to the east, and the fore and aft corrective magnets be adjusted so as to cause the compass needles to point correctly. Then the ship's head is turned, say to the north-east, when the compass may be found to deviate more or less from the truth. To correct this error, two additional magnets are put down, one on each side of the compass card, to act in concert with the first pair. These latter magnets are disposed east and west, or so as to occupy the precise positions with relation to the earth which the first pair occupied before shifting the ship's head to north-east, and they are now adjusted to bring the compass needle correct in the position to which the ship's head has been turned, that is, to the north-east. Having done this, the last-adjusted pair of magnets are removed, and then placed on a line running from north to south, and at the same distance from the center of the card as they occupied before shifting them. Adjustment is now secured by the aid of a third pair of magnets, which are to be placed in the positions from which the second pair were removed, the ship's head remaining in the north-east position. Or, instead of shifting the second pair of magnets, the ship's head may be moved to the north or south, and the third pair of magnets applied at right angles to the second pair. Or, after adjustment is made by the first pair, the ship's head may be turned to the north or south, and the error corrected by compensation for half the error of each pair of magnets. It is intended that five or six corrective magnets only should be employed in this system of adjustment, but four or more may be used at pleasure.

Large Steam Frigates.

A correspondent of the London *Mechanics' Magazine* states that some very large steam frigates, are now in the course of construction in order, we suppose, to come up to the magnitude of *our* new frigates. The *Merrimac* having rather astonished the naval authorities of England, by her heavy armament and huge proportions.

To Inventors.

The following truthful article we copy from *Clough's Reporter*, Philadelphia, Pa. The editor of the paper and author of this article is the inventor and seller of stove and furniture polish of renowned celebrity, dealer in fly and cockroach traps, and patentee of Clough's hen's nests. He speaks, therefore, from experience in the annexed article:—

"Perhaps there is no class of valuable citizens, who are more neglected, and who suffer more severely in their pecuniary interest than that of inventors. Any arrangements or propositions calculated to meet their necessities and relief should be regarded as a great benefaction, even though it were tinctured with no small degree of what to some may appear selfish, when they are asked to lend a helping hand to introduce to public notice and patronage any new invention or discovery, no matter how simple it may be.

This is an age of improvement, and so rapid are the new and useful inventions that we have hardly time to utter astonishment before another is brought forward. It is, therefore, needful that all should be made known. The public press should be the first resource to accomplish the desired object. Let everybody know what you have done, and what you wish to do. 'It is expensive,' says one. What of this? it is expensive to enjoy life. If you try to live without eating, it will save sixpence, but by the time you get learned it will be the *death* of you. So with advertising: judiciously done, it is only like learning—it can never be lost to a valuable inventor. The inventor of these polishes, after sixteen years' experience of active life, and thousands of dollars spent in advertising—for who has not heard from some one of his improvements—says he has long since come to the conclusion that this makes business, and business is the grand regulation of life.

Tradesmen's Marks in Law.

A singular trial took place in the Supreme Court, this city—Judge Davies presiding—on the 6th inst., and as it relates to a very important question which concerns our manufacturers, we will endeavor to present the whole bearings of the case clearly.

The parties were Morris L. Samuel and Edwin M. Dunn, plaintiffs, against Albert Berger and others, defendants. The complainants alleged that they were the assignees of Sylvester L. Samuel, who, by agreement with one James Brindle, acquired the right to use his name upon watches manufactured by Samuel and his assignees, and that defendants sell watches manufactured by Brindle and stamped with his name. They therefore sought an injunction to restrain defendants from selling such watches.

The Judge in his decision said, "The plaintiffs say that Brindle, as a watchmaker, had acquired a reputation as such, and that all watches manufactured by him were stamped with his name; that Sylvester J. Samuel purchased from Brindle the right to stamp Brindle's name on watches manufactured by Samuel; and that Samuel assigned to the plaintiffs the right to stamp Brindle's name on watches manufactured by them.

The defendants have on hand for sale the watches manufactured by Brindle and stamped with his name, and this Court is called upon to restrain them, by injunction, from selling the genuine, and thus to protect the plaintiffs in selling the simulated article.

The plaintiffs ask the Court to aid them in passing off upon the public watches manufactured by them, and held out to the public as made by Brindle, when, in truth, the watches made by Brindle, and stamped by him with his mark, are those which the defendants seek to sell.

If the defendants were seeking to make sale of watches manufactured by them as those manufactured by Brindle, and the right of the plaintiff to use his name as a trade-mark was clear, then the injunction should go; but they cannot call on this Court to aid them in passing off the watches made by them as those manufactured by Brindle.

At present it is sufficient to say that in all cases where a trade-mark is imitated, the essence of the wrong consists in the sale of the goods of one manufacturer or vender as those of another; and it is only when this false representation is directly or indirectly made, and only *to the extent in which it is made*, that the party who appeals to the justice of the Court can have a title to relief.

Applying these principles to the facts in the case, we shall see that the plaintiffs invoke a rule of law which the defendants might claim to be applied to them, but which will not avail the plaintiffs.

I am satisfied, from an examination of the cases on the subject of trade-marks, that in no case like the present has an injunction been issued, and to issue one in this case would be violating all the rules laid down in the books, as applicable thereto.

When the power of the Court has been invoked, it has been to restrain the defendant from marking his goods and selling them as the goods manufactured by the plaintiff, on the ground that such a fraud was an injury to the plaintiff, and tended to mislead and deceive the public. No such case is presented, and the motion for injunction must be denied with costs."

This case has brought out the fact of a great wrong being perpetrated upon the people, by putting the name of a certain manufacturer of high reputation upon goods which he does not manufacture, the object being deception.

Such practices in trade should not only be scouted by the public but a law should be made against them. If a manufacturer stamps, engraves, or paints the word *patent* on an unpatented article of manufacture, for the purpose of deceiving the public. he is liable to a fine of $100 for every such article sold. This is a just law; it is a protective statute for the benefit of inventors and the public.—Such a law should also be enacted to prevent the public from being deceived by spurious trade-marks, like those developed by the above case. The complaint was most audacious; it was a request that the legal power of this State be exercised to enable the plaintiffs to sell watches that deceived the public, and to stop the sale of the genuine watches. Mr. Brindle in selling to the plaintiffs the false privilege of putting his name on their watches, became, by so doing, a conspirator against the public—he deserves censure equally with them.

Agricultural Science.—Manuring.

It has been taught by Professors of Agricultural Chemistry, and apparently on reasonable grounds, that the very worst way to apply manure was to spread it out on the field and leave it exposed. It was argued that this exposure caused a loss of ammonia by evaporation, hence farmers were taught to plow their manures under as soon as they were spread upon the soil, under the penalty of losing a great deal of their fertilizing properties. An essay on this subject, by Dr. Voelcker, Prof. of Chemistry in the Royal Agricultural College, at Cirencester, Eng., contains statements that will surprise our farmers. He asserts that no loss arises from spreading manure on the surface of a field; on the contrary, he asserts, that if spread upon the field and allowed to lie until it is washed with rains, it is more beneficial than to plow it in at once. When spread out on a field, fermentation is stopped, and volatile matter ceases to escape. In the case of clay soils, he remarks, "I have no hesitation to say, that the manure may be spread even six months before it is plowed in, without losing any appreciable quantity of manuring matters." This is important information to our agriculturists, if correct.

Submarine Telegraphs.

There is a wire from Dover to Calais under the British Channel. There is a wire from Ostend to Dover, under the German Ocean Dublin and Liverpool are connected by a wire under the Irish Sea. Vienna and Sebastopol are linked by a wire under an arm of the Black Sea. The Ionian Isles are next year to be wired fast to Greece. Algeria is to be fastened to France, Malta to England, and Egypt to Constantinople; New Foundland is connected to Nova Scotia by a wire; and in 1857 the London Telegraph operator will hold in his hand wires running to the four quarters of the globe, as easily as a coachman gathers up the reins of a four-in-hand.

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D. N. P., of O.—Certainly there is no class of the community so much entitled to the Patent Office Reports as the inventor and patentee, whose money forms the fund from which the expense of the publication is derived. It would be better if the Commissioner had more copies appropriated for his distribution, and the Members of Congress less, for he is in a position to know who are entitled to them better than the M. C.'s, and will be likely to make a more judicious distribution. We will endeavor to have all of our clients furnished with these Reports. Patentees for 1855, who had their business transacted through this office, have been, we believe, already mostly supplied, and the Report for 1856 will not be printed for circulation until next autumn.

J. V., of Ohio.—Gregory's Organic and Inorganic Chemistry is published in two volumes, price $1·50 each. Porter's Chemistry, $1·00. They are good works. Published and for sale by A. S. Barnes & Co., this city.

W. O. H., of N. Y.—The method of restoring yellow soap to pure white is something very desirable to know. Purchase the work of Campbell Morfitt on Soap Making. Parry & McMillan, Philadelphia, are the publishers.

L. M. F., of N. Y.—It will require about 3000 cubic feet of gas to sustain 100 lbs. in a balloon. The explosive power of electricity has not been applied to propel machinery, and cannot be.

H. A. P., of Ill.—The receipt you refer to was for writing on ivory with nitrate of silver. Heat marble, write on it with a strong solution of the nitrate of silver, allow it to dry, and then wash it with a weak solution of glue, and you will obtain black writing on the stone.

W. W., of Philadelphia.—We now forget the price at which aluminum is selling in Paris. Any further new and useful information that we receive respecting it will appear in our columns.

I. K. S., of Pa.—With the weight of 1600 lbs. suspended as you describe on the shaft of your wheel, it is no wonder the gudgeon heats. If you cut two or three channels in your cast-iron journal box—inside—and fill them with an alloy of equal parts of tin and lead, adding about a 20th part of copper, the journal of the shaft will not be so liable to heat.

G. H. B., of R. I.—We have no data for calculating the strength of malleable cast-iron. Works on the strength of cast and wrought-iron are mostly useless, because there is such a great difference in the strength of different samples. We have seen malleableized iron that was more brittle than rough cast-iron.

W. W. B., of Mass.—At present we cannot give you the receipt for making shoemaker's balls for glazing the edges of shoe soles when a hot iron is applied.

E. P. B., of Me.—Mr. Conger's book has not yet been published. We regret that you have not described your experiments with his wheel more minutely. We like to gain all the information possible respecting fair practical experiments with water wheels.

J. W. P., of Ill.—We are just as favorable to the propelling of parcels through a tube by compression as by exhaustion.

F. K., of Conn.—Either of the works on draughting will answer your purpose, but Blakie & Sons' is the best. It requires taste and application to become master of the art. The Mechanical Dictionary to which you refer is not a great work, but it is the only one of the kind published.

S. G. C., of Mass.—Cold water forced in by a hydraulic pump is the best method we are acquainted with to test the strength of steam boilers.

J. C., of N. Y.—Yours will meet with attention.

P. M., of C, W.—The United States postage to Canada is twenty-six cents per annum. Communicate with J. M. Hutton, Richmond, Ind., respecting machinery for sawing laths from round logs. The specimens which you have sent appear to be pearls. Where did you get them? The number you sent for has been forwarded to your address.

H. J., of N. Y.—A boiler is no stronger than the weakest part of it, therefore be sure and make every part of it strong enough to resist the pressure of steam you intend to carry. Do not make it with a seam on the top.

Wm. Winter, of Rondout, N. Y., has heard of Burt's shingle machine, but does not know where one can be purchased.

A. F., of Mass.—A copyright holds good for 28 years, and a patent right for only 14 years. The treatise you want we cannot supply.

J. A. C., of Ala.—See engraving and description of the sewing machine referred to in the last number of the Scientific American. Write to the parties for information.

W. T. R., of Pa.—If you wish to procure the agency referred to, you had better write to the parties whose names appear as the owners.

H. D. W., of Mich.—If an invention has not been in public use for more than two years previous to an application for a patent, the patent if granted would be perfectly valid.

Money received at the Scientific American Office on account of Patent Office business for the week ending Saturday, Dec. 13, 1856:—

L. A. H. of Ill., $25; L. S. C. of N. Y., $30; F. J. F. of L. I., $30; W. D. Jr. of Pa., $100; B. A. H. of N. Y., $20; J. G. E. of Pa., $25; J. H. of N. Y., $25; M. B. of Ill. $30; H. H. of Mass., $30; J. S. C. of Pa., $25; W. L. Van D., of N. Y., $25; J. H. T. of N. J., $25. M. W. of N. Y. $32; J. P. G. of Ky., $25; J. H. T. of O., $55; S. L. Jr. of Ind., $30; J. T. of Pa., $30; C. S. P. of N. Y., $35; L. O. R. of Ill., $30; G. W. B., of L. I., $500; G. L. W., of N. H., $30; A. P. W. of Ill; $30; J. H. H. of Mo., $37; A. & R. of N. Y., $25; B. A. of Conn., $30; J. W. of R. I., $100; L. & L. of Ind., $30; P. C. of N. Y., $35; F. J. H., of N. J., $25; M. P. of N. Y., $45; S. D. T. of N. Y., $25; H. A. H., of N. Y., $25; J. G. G., of N. Y., $30.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, Dec. 13:—

L. M. P. of Wis.; C. W. of Me.; L. A. H. of Ill.; F. J. H. of N. J.; J. P. G. of Ky.; J. G. E. of Pa.; W. L. Van D. of N. Y.: J. B. of Ill.; J. H. K. of N. Y.; J. G. H. of N. J.; M. P. of N. Y.; J. H. T., of N. J.; J. H. of N. Y.; S. D. T. of N. Y.; M. W. of N. Y.; R. G. P. of N. Y.; J. H. of Wis.; H. A. H. of N. Y.; A. & R. of N. Y.; J. G. G. of N. Y.

Important Items.

Subscribers to the Scientific American who fail to get their papers regularly will oblige the publishers by stating their complaints in writing. Those who may have missed certain numbers can usually have them supplied by addressing a note to the office of publication.

Inventors Sending Models to our address should always enclose the express receipt, showing that the transit expenses have been prepaid. By observing this rule we are able, in a great majority of cases, to prevent the collection of double charges. Express companies, either through carelessness or design, often neglect to mark their paid packages, and thus, without the receipt to confront them, they mulct their customers at each end of the route. Look out for them.

Patent Laws and Guide to Inventors.—This pamphlet contains not only the laws but all information touching the rules and regulations of the Patent Office Price 12 1-2 cents per copy. A Circular, giving instructions to inventors in regard to the size and proper construction of their models with other useful information to an applicant for a patent, is furnished gratis a this office upon application by mail.

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Private consultations respecting the patentability of inventions are held free of charge, with inventors, at our office, from 9 A. M., until 4 P. M. Parties residing at a distance are informed that it is generally unnecessary for them to incur the expense of attending in person, as all the steps necessary to secure a patent can be arranged by letter. A rough sketch and description of the improvement should be first forwarded, which we will examine and give an opinion as to patentability, without charge. Models and fees can be sent with safety from any part of the country by express. In this respect New York is more accessible than any other city in our country.

Circulars of information will be sent free of postage to any one wishing to learn the preliminary steps towards making an application.

In addition to the advantages which the long experience and great success of our firm in obtaining patents present to inventors, they are informed that all inventions patented through our establishment, are noticed, *at the proper time*, in the Scientific American. This paper is read by not less than 100,000 persons every week, and enjoys a very wide spread and substantial influence.

Most of the patents obtained by Americans in foreign countries are secured through us; while it is well known that a very large proportion of all the patents applied for in the U. S., go through our agency.

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THE SATURDAY EVENING POST—Established August 4th, 1821. The publishers of this old and firmly established paper take pleasure in calling the attention of the public to their programme for the coming year. Surfeited with politics, the claims of literature will be more than ever appreciated by the reading world. We have, therefore, already made arrangements with the following brilliant list of writers: William Howitt, of England, Alice Cary, T. S. Arthur, Mrs. Southworth, Augustine Duganne, Mrs. M. A. Denison, &c. We design commencing, in the first number in January next, the following original novelet, Tallengetta, or the Squatter's Home, by Wm. Howitt, author of Rural Life in England. The following novelets will then be given, The Story of a Country Girl, by Alice Cary. The Withered Heart, by T. S. Arthur. Lighthouse Island, by the author of My Confession. The Quaker's Protege, by Mrs. Mary A. Denison. The Raid of Burgundy, a tale of the Swiss Cantons, by Augustine Duganne, author of The Lost of the Wilderness, &c. We have also the promise of a short and condensed Novelet, by Mrs. Southworth. In addition to the above list of contributions, we design continuing the usual amount of foreign letters, original sketches, choice selections from all sources, agricultural articles, general news, humorous anecdotes, view of the produce and stock markets, editorials, &c., our object being to give a complete record, as far as our limits will admit, of the Great World. Terms, $2 a year; 4 copies $5; 9 copies $10; 21 copies $20. Address,
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Science and Art.

Gums and Resins.

The following are extracts from a lecture of Prof. P. L. Simmonds, published in the *Journal of the Society of Arts*:

East Indian Gum Kino.—This, one of the most useful indigenous gum resins of the East, is the produce of the *Pterocarpus marsupium* Roxburgh. The gum flows out on longitudinal incisions being made in the bark, which being fleshy and very thick, is easily done. It trickles down in a tenacious semi-fluid form, and is collected in a cocoa nut shell. On exposure to the sun in flat places it soon hardens into angular brittle shining pieces, of a bright ruby color, highly astringent, and soluble in hot water. The gum changes into a blood red color by alkalies, which, however, destroy its astringent properties. It is precipitated by the salts of iron, silver, lead, &c., and, with sulphate of iron, forms a fine ink. It dissolves readily in water, to which it imparts its own beautiful color.

Another variety of Indian Kino exudes during the hot weather from natural fissures and wounds in the bark of the *Butea frondosa* a very common leguminous tree. It is known in commerce by the name of Bengal Kino, or gum Butea, being closely allied to the Kino of Pterocarpus, in its chemical and medicinal properties. The natives of India use it for tanning, but as it imparts to the leather a red color it is considered objectionable by European and American tanners. Kino is commonly used in medicine for its astringent properties, especially in diarrhœa, chronic dysentery, and other such cases.

Amber.—The source of amber was long uncertain. By some it was considered a carbonaceous mineral, but it is now universally supposed to be a vegetable resin, the product probably of a Pinus. It is too well known in appearance to need description. It has several commercial uses. Being commonly translucent, and susceptible of a good polish, it is made into ornaments as necklaces. It is the base of an excellent varnish, and the source of succinic acid, which is employed in chemical investigations. The beautiful black varnish used by coach-makers, is a very carefully prepared compound of amber, asphaltum, linseed oil, and oil of turpentine. Amber often contains insects, flies, ants, spiders, &c., some of which are so delicately formed that they could not have occurred except in a fluid mass, such as volatile oil or natural balsam.

The chief supplies come from Prussia, where it is thrown up on the coast between Konigsberg and Memel. The imports in the last few years have averaged about 40 cwts. yearly. Large deposits of amber were found a few years ago in some lakes on the eastern coast of Courland, not far from the Gulf of Riga; and in January, 1854, a bed of yellow amber, apparently of great extent, was found on sinking a well at Prague, from which pieces weighing two and three pounds were extracted. The largest block known is in the Royal Cabinet at Berlin, and weighs thirteen pounds.

This fossil is also found in Madagascar, in Japan, on the shores of the Indian Archipelago, and in small quantities on the coast of China. It forms a considerable item of import in the Chinese ports, the greater portion coming from the eastern coast of Africa; its value there formerly was very great as an incense and for ornaments. Transparent yellow pieces are considered the best, and the price in the East, as here, varies according to size and quality; for its color ranges from black and yellow through red and white. A resin called false amber—no doubt a copal—is among the exports from Calcutta to Great Britain, to the extent of several tuns.

Filling Ice Houses.

As the time for gathering in the ice crop is at hand, the following instructions for packing it in, from the *American Agriculturist*, will be of interest to many of our readers:—

"It sometimes happens, that the best ice in the whole season is made in the month of December. It is always well to secure the first good ice that makes, say, one foot in thick ness. This, if it be perfectly clear and free from frozen snow, is thick enough, and the sooner the crop is secured the better.

The first business is to cut the ice into suitable blocks for packing. When there is no machinery to be employed in handling the blocks, two feet by three will be found a convenient size for a house twelve feet square, as they will make a perfect fit in the packing. The ice should be first marked off with some sharp tool, and a crevice be made to be followed with a coarse saw—a cross-cut saw, with one handle out, or an old saw-mill plate with a handle added, will answer. The saw should follow the marker as closely as possible, to make straight-edged blocks.

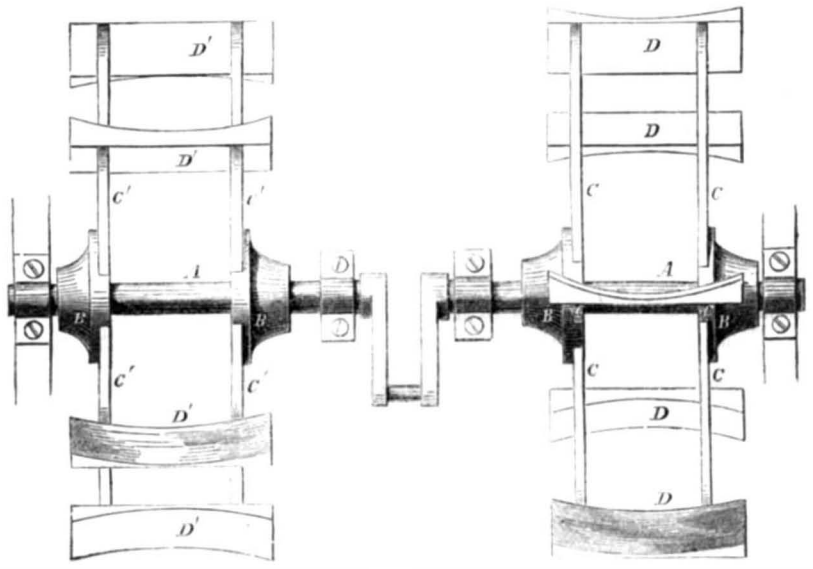
In selecting ice for cutting, take that which is perfectly clear and solid. Air or dirt, frozen in, will not keep so well. Care should be taken also to keep the blocks clean while laying them in. After the first layer of blocks is put down, and the sawdust or sea-weed is packed in solid at the sides, the small crevices around each block should be filled up with pounded ice or dry snow. If the weather is intensely cold, a very little water may be used at the cracks to make the union perfect. The more completely you can exclude air from the body of the ice, the better it will keep.

Having finished the first layer, sweep off clean, and put in the next, which cement together with the pounded ice like the first. Continue this process until the last layer, which cover with sawdust, or straw, or sea-weed if more convenient, eighteen inches in thickness. If the ice-house is properly made and good ice put in it in this manner, you will find it very little diminished next May, when you open it to get the first block for the refrigerator.

A subscriber asks if an ice-house cannot be filled by pouring in water from time to time and letting it freeze. This might, perhaps, be done on a small scale, should there be a long-continued succession of freezing days. But the operation would be very tedious, and, in the end, even if successful, more expansive than cutting ready-formed ice."

[We would add that to freeze water solid in the inside of a house, so as to fill it from top to bottom, strong stone walls would be rifted by the expansion of the water into ice.

GLOVER'S PATENT PADDLE WHEEL.



Glover's Paddle Wheel.

This figure is a plan view of the improvement on the Paddle Wheels of steamboats and ships for which a patent was granted to A. M. Glover, of Waterborough, S. C., on the 12th of June, 1855.

The nature of the improvement consists in making the face of the paddle concave, by embracing the arc of a circle between its ends while the back of the paddle is a plane surface or straight line between its ends.

H is the shaft of the wheel. C C represent the arms on one side, and C' C' the arms on the other side. D D represent the plane faces of the paddles, and D' D' the concave faces. The advantage claimed for the paddles so constructed is concentrating to a focus the force upon the water when the wheel is propelling forward; and by having the backs of them plane they are protected from the slip that would ensue if they were concave also; for backing a vessel they are equally as efficacious as common paddles, while angular paddles are not. The patentee states that this form of paddle wheel is the result of many experiments instituted to secure speed without expending an excess of power, and that it is an important improvement, deserving the consideration of all who are interested in steam navigation.

He informs us that in a series of experiments made with a model there was a gain of 20 per cent. of speed obtained with these paddles over the common kind, thus proving, the inventor believes, that it is the most effective and simple paddle wheel yet brought before the public. He is desirous of making a liberal arrangement with steamboat owners and others to have his paddle wheel introduced. He has applied for patents in Europe, and is at present staying at the Metropolitan Hotel, this city, wheer he may be found, and will give full explanation on every point respecting which information may be desired. The paddles may be made either of metal or wood.

More information may also be obtained respecting these paddle wheels by addressing Messrs. Moore & Glover, Charleston, S. C.

A Bridge from New York to Brooklyn.

The subject of a bridge over the East River, to unite the cities of New York and Brooklyn, has oftentimes been talked of, and various plans have been proposed to effect this object. A suspension bridge has been the only apparently feasible one proposed, and yet it has been considered impracticable, because, on the New York side of the river, a tower of about 200 feet high would have to be erected, to allow the curve of the bridge to clear the tallest masts of ships sailing under it. This would require a grade of roadway up to it, starting from Broadway (the highest street,) gradually rising above the tops of the highest stores.

Drawings have been exhibited to us of a new plan for a bridge over the river, devised by Samuel Nowlan, C. E, to overcome this difficulty. It is designed that a bridge should start with its first high piers from the foot of Fulton street, New York, and stretch over the river on successive arches, to Brooklyn Hights—requiring no grading on that side. It is intended to be an arched bridge, having iron pillars resting on double stone piers, laid on submarine foundations; the lineal arches are to be 300 feet span, 120 feet above the water line, and the transverse arches between the piers 100 feet span; thus making the roadway very wide for two tracks of cars connected with the Brooklyn railway. On the New York side, instead of raising a graded way from the central street of the city, Mr. Nowlan, ingeniously, proposes to raise a graded iron suspension road along the river side, commencing at Maiden Lane, running transversely up to the elevated porch of the bridge at the foot of Fulton street. Not a single street would be obstructed by this arrangement, nor would any of the docks, as the whole of the suspension roadway, underneath, is intended for dock stores for goods while being shipped and unshipped—something much needed in this city. A similar roadway can be erected from Peck Slip to the porch of the bridge, thus providing two roads to it. Such a bridge would no doubt cost a great sum, but it is the most ingenious plan yet proposed for such a structure over the East River.

Remedy for Burns.

We know of nothing better to apply to wounds caused by burns than the tincture of the stinging nettle (*Uotica ureas*). Any person can prepare it, by taking the whole plant, rubbing it to pieces, and then putting it into alcohol, letting it stand for a few days in a cool place. No matter how severe the burn may be, cover the wound with a linen cloth soaked in this tincture, and notwithstanding it may aggravate the pain for a few minutes, it will soon disappear, and but little soreness will be felt afterwards.

Corns.—The best cure for these troublesome things that we have ever tried. is to soak the feet in hot water for a quarter of an hour, so that the corn becomes soft, and then trim it off as close as possible, and not cause pain.—Then take the tincture of the Arbor Vitæ, placed upon a little cotton, and apply to the corn, and after a few applications the corn will not only disappear entirely, but will not be likely to return again.

A gentleman writing to the *American Agriculturist*, states that he thoroughly cured a fine young mare afflicted with the heaves, by feeding her on cornstalks, and that the disease never returned. The writer quotes Judge Buel's opinion as to cornstalks being a remedy, that distinguished agriculturist having had a horse afflicted with that disorder, which disappeared after being so fed.

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